REPORT RESUMES

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MEASURED NEEDS OF TEACHERS AND THEIR BEHAVIOR IN THE CLASSROOM.
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DESCRIPTORS- TEACHER MOTIVATION, *TEACHING TECHNIQUES, *TEACHING METHODS, TESTING, *OBSERVATION, *CLASSROOM TECHNIQUES, PSYCHOLOGICAL NEEDS, URBAN AREAS, RURAL AREAS, SALT LAKE CITY, UTAH

THE STUDY ATTEMPTED TO DETERMINE THE RELATIONSHIP BETWEEN THE NEED STRUCTURE OF THE TEACHER WITH RESPECT TO ACHIEVEMENT, AFFILIATION, RECOGNITION AND CONTROL, AND THE TEACHER'S PERFORMANCE IN THE CLASSROOM. THERE WERE THREE SEPARATE PHASES TO THIS RESEARCH--(1) INSTRUMENTS WERE DESIGNED TO MEASURE THE NEEDS OF TEACHERS IN THE CATEGORIES MENTIONED ABOVE, (2) THE METHODS OF MEASURING TEACHER PERFORMANCE IN THE CLASSROOM WERE SELECTED AND APPLIED, AND (3) THE RELATIONSHIPS BETWEEN THE PERFORMANCE OF THE TEACHERS IN THE CLASSROOM AND THE CHARACTERISTICS OF THE TEACHERS WERE MEASURED BY THE VARIOUS TESTING DEVICES. THE SUBJECTS WERE TWO GROUPS OF UTAH TEACHERS--77 FROM METROPOLITAN SCHOOL DISTRICTS, GRADES K-6, AND 41 FROM SMALL TOWN AND RURAL AREAS, GRADES 1-5. THE INSTRUMENTS DESIGNED WERE--(1) UTAH STUDY OF BEHAVIOR, (2) TEST OF PERSONAL PREFERENCES FOR EDUCATIONAL OBJECTIVES, (3) TEST OF REACTIONS TO EDUCATIONAL SITUATIONS, (4) TEACHER PREFERENCE SCHEDULE, (5) VAN PIT SERIES WISHES TEST, (6) SELF-RATING SCALE, AND (7) INDIVIDUAL BACKGROUND QUESTIONNAIRE. IN ADDITION, WITHALL'S TECHNIQUE OF SAMPLING VERBAL STATEMENTS OF TEACHERS IN THE CLASSROOM AND RATING SCALE FOR RECORDING THE OBSERVERS' ASSESSMENT OF 35 CHARACTERISTICS OF THE TEACHER CLASSROOM BEHAVIORS WERE USED. COOPERATION OF THE SCHOOL DISTRICT OFFICIALS AND TEACHERS, OBSERVATIONS OF SCIENTISTS IN CLASSROOMS, AND KITS OF TESTS FOR TEACHERS WERE THE METHODS USED. NEGATIVE CORRELATION BETWEEN CONTROL AND AFFILIATION AND ACHIEVEMENT RATINGS BY OBSERVERS WERE FOUND. SCORES OF TEACHERS STATEMENTS WERE SUBSTANTIALLY HIGH. RECOMMENDATIONS WERE MADE FOR FURTHER STUDY OF TEACHER ATTITUDES AND TRAINING. (GC)

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Measured Needs of Teachers and Their Behavior in the Classroom

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Final Report

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS ii

LIST OF TABLES AND FIGURES vi

CHAPTER PAGE

I. THE PROBLEM 1.01

- The Development of a Model 1.02
- Some Determinants of Teacher Behavior 1.04
- The Concept of Need 1.05
- The Needs of Teachers Studied In This Inquiry 1.06
- The Plan of the Study 1.07

II. DEVELOPMENT OF AN INSTRUMENT FOR MEASURING TEACHER MOTIVATION 2.01

- Purpose 2.02
- Theoretical Considerations 2.03
- Development of the Items 2.05
- Format 2.07
- Scoring 2.08
- Category Scoring 2.08
- Scoring by Rating 2.09
- Reliability 2.10
- Relationships Among Measures of Needs 2.11
- Sex Differences 2.13
- Validity 2.13
- Correlations With Other Tests 2.20
- Norms 2.21

III. ADDITIONAL INSTRUMENTS USED AS PREDICTORS OF TEACHER BEHAVIOR 3.01

- The Stern and Masling Motivation Measure;--Teacher Preference Schedule, Form G158 . . . . 3.01
- The Van Pit Series-Wishes 3.05
- Exploration of the Educational Objectives of Teachers in Relation To Their Need Structure (Objectives Test) 3.06
- Rating Scale 3.07
- Procedure Finally Adopted for Reducing the Effect of Certain Response Sets 3.09
- Self Ratings 3.09
- Test of Reactions To Teaching Situations (Situations Test) 3.10
- Procedure for Collecting the Predictor Test Data . . 3.11

CHAPTER PAGE

IV. THE DEVELOPMENT OF DEVICES FOR MEASURING ASPECTS OF TEACHER BEHAVIOR IN THE CLASSROOM 4.01

The Measurement of Teacher Behavior in the Classroom 4.01
  1. Withall's Technique 4.02
    a. The Technique 4.02
    b. Scores Derived From the Statements 4.08
  2. Rating Procedures 4.09
    a. Development of a Rating Scale 4.10
    b. Factor Analysis of the Q-Sort Data 4.16
  3. The Assessment of the Classroom Situation Through the Responses of the Pupils 4.23
    a. The Drawing Technique 4.24
    b. Scoring Procedures 4.26

V. THE COLLECTION AND ANALYSIS OF DATA 5.01

I THE POPULATION STUDIED 5.01
  Sample 1 . . . . 5.01
  Sample 2 . . . . 5.02
II FINDINGS 5.03
  1. Comparison of the Two Samples On the Various Measures 5.03
  2. Criterion Measures 5.04
    a. Ratings 5.04
    b. Q-Sort Factors Based Originally On the Same Dimensions Employed in the Ratings . . . 5.07
    c. Teacher Statements 5.08
    d. Intercorrelations Among Criterion Measures 5.13
  3. Predictor Measures 5.15
    a. Teacher Preference Schedule 5.15
    b. Utah Study of Behavior 5.15
    c. Situations Test and Educational Objectives Test 5.18
    d. Self-Ratings 5.19
    e. Van Pit Wishes Test 5.20
    f. Intercorrelations Among Predictors Across Instruments 5.20
  4. Relationships Between Predictors and Criteria . . 5.24
    a. General Relationships 5.24
    b. Self-Ratings 5.30
    c. The Van Pit Series-Wishes 5.32
  5. Relationships Between Pupil Drawings and the Teacher Measures 5.34
  6. Relationship of Criterion and Predictor Measures To Grade Taught 5.35

CHAPTER PAGE

VI. PREDICTION OF TEACHER BEHAVIOR FROM A PATTERN ANALYSIS OF THEIR NEEDS 6.01

  Research on Pattern Analysis 6.02
  Methods 6.02
  Results 6.04
  Discussion 6.10

VII. SUMMARY, CONCLUSIONS, AND IMPLICATIONS 7.01

  I SUMMARY 7.01
    1. Purpose 7.01
    2. Procedure 7.01
    3. Results 7.03
  II DISCUSSION 7.07
    1. Some Problems Concerning the Use of Projective Devices For Predicting Behavior 7.07
    2. Pupils' Perceptions of the Classroom and Teacher 7.08
    3. Concerning the Failure of Measures of Achievement Motivation to Predict 7.09
    4. Some Problems Concerning the Classroom Variables 7.10
    5. Implications for Teacher Education 7.11

BIBLIOGRAPHY B.01

APPENDICES . . . .

  I The Utah Study of Behavior A1.01
  II Category Scoring System for the Utah Study of Behavior A2.01
  III Questionnaire A3.01
  IV Teacher Preference Schedule, Form G158 . . . . . . A4.01
  V Personal Preferences for Educational Objectives A5.01
  VI Motivation Rating Scale A6.01
  VII Classification of Statements A7.01

LIST OF TABLES AND FIGURES

TABLE		PAGE
Table 2.01	Scoring Agreement (2 scores) for Category and Rating Scores and Rating vs. Category Correlations N = 98.	2.10
Table 2.02	Alternate Forms Reliability--Six Week Interval	2.11
Table 2.03	Correlation Between Category Scores for Form A On Each of the Four Needs. The Data for 98 Females and 46 Males Are Reported Separately	2.12
Table 2.04	Correlations Between Rating Scores On Each of Four Needs for 98 Students	2.12
Table 2.05	Relationship Between Rating Scores for Each of Four Needs for 77 Teachers	2.13
Table 2.06	Comparison of Scores Made By 98 Female College Students and 46 Male College Students On Each Need. The Scores Are Derived From Category Scoring Form A	2.13
Table 2.07	Correlations Between Need Scores and Performance	2.15
Table 2.08	Relationship Between Need Scores and Grade Point Average and the Scores on the Cooperative English Test CGPA - Cumulative Grade Point Average	2.17
Table 2.09	Means and t-tests Comparisons of the Three Known Groups On the USB Need Scales	2.18
Table 2.10	Adjusted Means for the Three Known Groups on the USB Need Scales	2.19
Table 2.11	Correlations Between USB and TAT Measures of Achievement and Affiliation Needs and the Reliability of TAT Measures	2.21
Table 2.12	98 Female College Students Form A Category Scoring. Test Administered Under Neutral Conditions	2.23
Table 2.13	98 Female College Students Form A Rating Scoring. Test Administered Under Neutral Conditions	2.24

TABLE PAGE

Table 2.14 51 Male College Students Form A Category Scoring. Test Administered Under Neutral Conditions 2.25

Table 3.01 Intercorrelations Between Scales On the Stern and Masling Teacher Preference Schedule . . 3.04

Table 3.02 Split-Half Reliability of Raw Scores Derived From Personal Preference for Educational Objectives (Based on 59 Graduate Students) . 3.08

Table 3.03 Correlation Between Raw Scores Derived From the Four Scales of the Personal Preference for Educational Objectives Scores and the Sum of the Ratings for Each Scale. (Data Based on 59 Graduate Students) 3.08

Table 4.01 Agreement Among Classifiers Using the Final Classification System on Ninety-Five Statements 4.05

Table 4.02 System for Classifying Teacher Statements . 4.07

Table 4.03 Frequency of Scores on Teacher Statements. . 4.09

Table 4.04 Rating Scales 4.11

Table 4.05 Traits On Which the Q-Sort Was Performed for 82 Teachers 4.14

Table 4.06 Matrix of Correlation Coefficients Derived From the Q-Sort Data (Variables Described in Table 4.04) 4.19

Table 4.07 Factor Loadings - Teacher Motivation Study - 5th Iteration - Centroid Analysis 4.20

Table 4.08 Rotated Factor Matrix, Varimax Solution, Q-Sort Data 4.21

Table 5.01 Means and Standard Deviations for Selected Variables 5.05

Table 5.02 Agreement Between Two Raters On 30 Characteristics 5.06

Table 5.03 Intercorrelations Among Ratings 5.07

Table 5.04 Intercorrelations Among Factor Scores . . . 5.08

TABLE PAGE

Table 5.05 Analysis of Variance Reliability Estimate for the Academic Achievement Emphasis Score . 5.10
Table 5.06 Analysis of Variance Reliability Estimate for the Controlling Score 5.10
Table 5.07 Analysis of Variance Reliability Estimate for the Affiliation Score 5.11
Table 5.08 Analysis of Variance Reliability Estimate for the Management Score 5.11
Table 5.09 Intercorrelations Among Teacher Statement Scores 5.12
Table 5.10 Teacher Behavior Measures - Intercorrelations 5.14
Table 5.11 Intercorrelations Among Teacher Preference Schedule Scores 5.16
Table 5.12 Intercorrelation Among USB Scales 5.15
Table 5.13 Teacher Preference Schedule Cluster Analysis 5.17
Table 5.14 Intercorrelations Among Scales of the Situations Test 5.18
Table 5.15 Intercorrelations Among Scales of the Educational Objectives Test 5.18
Table 5.16 Means and Standard Deviations of Self-Ratings 5.19
Table 5.17 Intercorrelations Among Self Ratings 5.20
Table 5.18 Means and Sigmas for Van Fit Scores 5.20
Table 5.19 Correlations Among Major Need Scales on Predictor Scales [Teacher Preference Schedule, Reactions to Situations, Educational Objectives] 5.21
Table 5.20 Correlation Between Original Teacher Preference Schedule (TPS) Needs and USB, Situations, and Objectives Tests 5.22
Table 5.21 Correlations Between Self-Rating and Teacher Preference Schedule (TPS) 5.23
Table 5.22 Relationships Between Teacher Preference Schedule (TPS) and Criteria including Factor Scores (F_1, F_2, etc.), Teacher Statements (T.S.) and Ratings (Rat.). 5.25

TABLE PAGE

Table 5.23 Relationships Between USB Scores, Reaction to Situations Scores (Sit.) and Educational Objectives scores (Obj.) On the One Hand and Criterion Scores On the Other. Criterion Scores Include Factors (F_1, F_2, etc.) 5.28

Table 5.24 Correlations Between Criterion Measures of Factor Scores (F_1, F_2, etc.), Teacher Statement Scores (T.S.) and Ratings (Rat.) With Adjusted Scores of Predictors Which Include Teacher Preference Schedule (TPS), Educational Objectives (Obj.) and Reactions To Situations (Sit.). All scores of Predictors Are Adjusted Scores 5.29

Table 5.25 Correlation Between Self-Ratings, Factor Scores (F_1, F_2, etc.), Teacher Statements Scores (T.S.), and Ratings (Rat.) 5.31

Table 5.26 Correlations Between Selected Van Pit Scales and Criterion Variables 5.33

Table 5.27 Significant Correlations Between Scores Derived From Pupil Drawings and Teacher Measures 5.35

Table 6.01 Mean Criterion Scores and t-tests for High and Low Need Pattern Groups On the Teacher Preference Schedule 6.06

Table 6.02 Correlations Between the Teacher Preference Schedule and Pattern Need Scores and the Teacher Classroom Behavior Measures 6.08

Table 6.03 Partial Correlations Between the Teacher Preference Schedule Affiliation and Control Pattern Scores and the Criterion Variables with the Conventional Score Held Constant 6.09

Table 6.04 Partial Correlations Between the Teacher Preference Schedule Affiliation and Control Conventional Scores and the Criterion Variables With the Pattern Score Held Constant 6.10

FIGURES

Figure 2.01 Mean Differences in Percentage Completed Tasks Recalled, Percentage Incompleted Tasks Recalled for Low, Middle and High Need Achievement Groups Under Relaxed and Aroused Experimental Conditions 2.16

CHAPTER I

THE PROBLEM

Most studies of teaching that have been undertaken have been directed towards the immediate goal of improving the instructional process. Some of these studies have attempted to discover characteristics of teaching that are related to efficiency of learning. Other studies of teaching assume that the characteristics of the effective teachers are known and that educational research must develop methods of selecting and training students of education who can later manifest such characteristics as teachers. Research of this nature is designed to build a technology rather than to build an organized body of knowledge about the teaching process.

The research reported in this document is based on a different approach to problems of teaching. The scientists who have undertaken the project regard all of the phenomena which constitute the universe of education as natural phenomena which can be studied in much the same way as other natural phenomena have been studied. Like other scientists, those who have worked on this project have directed their attention to phenomena that interest them. In this case the phenomena of interest happen to be phenomena related to the classroom behavior of teachers, but they are regarded as naturally occurring phenomena which, through research, can be understood. The purpose of the scientists, in this connection, has not been to produce immediate educational reforms--a field already overcrowded--but rather has it been to arrive at understanding of some of the phenomena that can be observed.

The word understanding needs some explanation at this point. When it is said in this report that some understanding of an educational phenomenon has been achieved, it will imply that some lawfulness has been discovered. The word understanding is thus used to convey the same meaning as that conveyed by the physical scientist when he uses it. Hence, when speaking of research directed towards an understanding of teacher behavior, reference is made to research designed to discover laws concerning the behavior of teachers in classroom situations. The concept of the understanding of natural phenomena presented here represents an approach to research which has often been referred to as physicalism since it represents an approach which has been thoroughly successful in understanding many of the natural phenomena involving nonliving objects.

The approach is also behavioristic rather than phenomenological. This means that it is concerned with the study of behavior of teachers as it is observed. One may, nevertheless, sometimes infer inner psychological processes as an aid to understanding or for the purpose of arriving at variables which have to be taken into account. In doing this it is recognized that the inner processes postulated are hypothetical and are introduced as convenient devices to help in thinking.

One major purpose of achieving understanding of teacher behavior, as the term understanding is defined here, is to be able to predict the characteristics of teaching from antecedant and concommitant conditions. Another is to achieve some degree of control, a word which is often used by educators in a different meaning and with different philosophical connotations. One would be able to control teaching, in a scientific sense, if it were possible, by appropriately selecting and training students of education and by providing appropriate administrative conditions in the schools to which they were assigned, to insure that the teaching process would manifest certain specified characteristics. This type of scientific control does not imply that one person imposes his will on another which is the usual sense in which the word control is used in education. The scientist is no more concerned with imposing his will or another person's will on a teacher than he is in imposing his will (or another's will) on a body falling in space. Control, in the scientific sense, involves the utilization of the natural properties of phenomena to arrange for certain events to take place.

The writers take the position which has commonly been taken by scientists that prolonged scientific inquiry is likely to be necessary before results of practical value are likely to be achieved. Scientists often regard much that goes on within the domain of educational research as similar to the attempts of the alchemists to turn base metals into gold. The aim of the alchemists was highly practical, in an economic sense, but highly impractical as far as the possibility of achieving any useful results were concerned. Before the alchemist could achieve his goal a theory of atomic structure had to be developed.

The educational research worker has the choice of either pursuing the path taken by the alchemist and working on problems of immediate practical importance or of taking the path which has been taken by the natural scientist. The study reported here is a study undertaken in the latter tradition. The emphasis is not on producing results which may have immediate significant applications but rather is it an attempt to acquire some knowledge about the natural phenomena occurring in the classroom. It aims to contribute to scientific knowledge about teaching phenomena. The hope is that the development of a scientific knowledge about teaching phenomena will ultimately produce changes in education as profound as those which the physical sciences have produced in other phases of life.

The Development of a Model

The research here is concerned with the development of a model, that is to say a set of theoretical constructs concerning the determinants of teacher behavior in the classroom. The development of such a model is clearly a very complicated task and no single research or program of researches can be expected to develop a comprehensive model which will permit prediction of teacher behavior. A single program of research must limit itself, not just to a single class of variables, but also to certain variables within that class. In order to explore further the problem of developing a model of teacher behavior, a brief consideration must be given to the classes of variables which this task may involve. The following two broad categories of variables must necessarily be involved in the development of such a model:

1. *Stimulus variables in school situation*. Any model of teacher behavior must take into account the fact that the behavior of the teacher is structured to some extent by immediate conditions existing in the school and community in which the teacher works. Teacher behavior is very clearly influenced by such factors as (a) the expectations of the principal concerning what should take place in the classroom, (b) similar expectations on the part of the parents, (c) expectations of the pupils and behavior indicating that the teacher is or is not meeting their expectations, (d) the habits brought by the pupils to the classroom and particularly those which reflect the social class of origin of the pupils, (e) the requirements established by the school system including the curriculum requirements, and (f) the circumstances produced by the equipment and physical plant of the school. Research has only just begun to explore these variables. Little knowledge is available concerning which of the variables within any one of the classes exert a powerful influence on teacher behavior and which do not. Indeed, lack of knowledge is such that one cannot within this area point to a few variables which have been established as of central importance. The variables have not been established and neither have ways of measuring them. Perhaps this reflects a general lack of interest among psychologists in the measurement of environmental variables.

2. *Intervening variables*. A model of teacher behavior in the classroom must take into account the fact that behavior in the classroom is determined not only by the immediate properties of the teaching situation, but also by the characteristics of the teacher. Given similar teaching situations, one may still expect differences between the performances of teachers as a result of the fact that they differ in personal characteristics. The latter may be classified in many different ways, but for the present purpose here, the following two major categories represent a useful partition of the variables involved.

(a) *Variables generated by teacher training*. Relatively little is known about this class of variables though all teacher training is based upon the assumption that such variables can be generated. While it can be shown that teacher training produces changes in the cognitive structures of teachers, there is little evidences that these changes produce correlated changes in classroom behavior. Many approaches to the problem of identifying these variables are possible and research related to this category of variable must be undertaken before a comprehensive model of teacher behavior can be built.

(b) *Variables representing enduring traits generated by conditions other than teacher training*. This category includes the vast range of psychological variables that are typically rated or measured. Numerous studies have been made which attempt to relate measures of intellectual performance with assessments of performance in the classroom. The results of such studies have generally been negative but this may be at least partly a consequence of the fact that many of these have attempted to predict some vaguely defined variable such as "teacher effectiveness." Equally unproductive have been studies which attempt to relate ratings of personality to ratings of performance in the classroom. However, the range of possible inquiries has not been exhausted for as new measurement procedures develop new avenues are provided for investigating the relationship of intervening variables to the classroom behavior of teachers.

Some Determinants of Teacher Behavior

From the point of view of the present study, the classroom is regarded as a situation through which both pupils and teachers satisfy their needs. While much that is written on modern educational theory emphasizes that the classroom must be so structured that it satisfies the needs of the pupils, little thought has been given to the fact that the teacher is also a person with a need system which will function as a system of intervening variables in determining his classroom behavior. From the point of view of the natural scientist the classroom is a place in which a number of living organisms have been thrown together through the operation of social forces. These organisms form a community in which, within the limits of behavior prescribed by the school situation, each must find some way of satisfying his needs. It is conceivable that a classroom might be so structured that it provides considerable satisfactions for the needs of the pupils but little satisfaction for the needs of the teacher. The reverse might also occur and the situation might be such that the teachers needs were well satisfied but those of the pupil were not. Whether it is possible to design a school environment in which both the needs of the pupils and those of the teacher can be satisfied simultaneously still remains to be demonstrated. There is considerable possibility that the needs of most teachers may be such that the satisfaction of these needs may not be compatible with the satisfaction of the need structures of most pupils as these structures appear in our society.

The inability of the school environment to provide the means of satisfying both the need structure of the pupil and the need structure of the teacher may result in serious disruption of the learning process. A common example of this phenomena is found in those cases in which the teacher attempts to exercise a high degree of control over a class in order to achieve an educational objective which does not appeal to the children. For example, a teacher decides that the children must acquire a much greater degree of skill in spelling than they at present possess. In order to accomplish this goal a period is reserved each day for drill in spelling which happens to be a most distasteful activity to the children in the way this particular teacher conducts it. During these spelling periods the children are listless and inattentive. Whispering between children becomes more and more common and some of the boys start nudging one another and pushing each other around. The teacher, intent on controlling the class, becomes more and more frustrated. First she begins to reprimand and, as the situation becomes more and more out of control, shows signs of extreme irritation. In such a situation tensions may build up to the point where chaos results. Sometimes the incompatibility of channels of satisfying the needs of the pupils and those of the teacher appear in a milder form as when the teacher shows an excessive amount of reprimanding behavior.

The fact that the motives of the pupils and the motives of the teacher are operating does not mean that they are necessarily incompatible. A teacher may have a high need to control and yet may exercise control in such a direction that the needs of the pupils may be satisfied, but the reverse may also occur. A teacher may control a class in such a way that learning is facilitated and so that children satisfy their curiosity about many matters. On the other hand a teacher may control her class for the sole purpose of maintaining a quiet and orderly room. Needs of teachers may be satisfied in many different ways, some interfere with the need satisfaction of pupils and some do not.

The Concept of Need

The concept of need will be discussed at greater length in later chapters, but a brief treatment of it is appropriate at this time. The concept of need has a long and somewhat confused history in education. The classical concept of need ties it in closely with the ideas of goal and striving. Children are believed, according to this viewpoint, to manifest strivings in the direction of certain goals. The strivings are considered to be the manifestations of an inner, but unobservable, condition known as need. Need is thus considered to manifest itself by giving a certain direction to behavior, that is to say, behavior is directed towards certain goals rather than to others. Commonly tied to this concept of need was the implication that certain of these needs manifested by children were in some way inborn and that where the child is freed from repressive forces that he will tend to seek out goals which satisfy these needs. This was virtually the doctrine of Jean Jacques Rousseau. It is also not far from the doctrine promoted vigorousli in relatively recent years by the Progressive Educations Association.

These approaches typically postulate some form of 'self actualization' need which has the property of propelling the individual in the direction of certain culturally desired behaviors or in the direction of fulfilling certain innate and ill defined abilities. Although this position has received much currency in educational circles it has been of little scientific value, largely because of the vagueness of its postulates. One can hardly blame Rousseau and his educational descendants for the weaknesses and limitations of the doctrine of need which they promoted and attempted to apply. They did not have the knowledge necessary for building a theory of need which could stand up under scientific examination. They must be thought of as speculators rather than as developers and as speculating in an area where most speculations are likely to be wrong.

Psychologists like educators have also long speculated on the structure and genesis of the needs of man. A thorough review of these speculations would occupy extensive space, and perhaps much more space than would be occupied by experimental work in the area, which is largely a product of the last decade. In briefly discussing psychological speculations in this area, it is of interest to point out that just as educators in their early speculations were inclined to think of the needs of the child as being primarily inborn so too were early psychologists inclined to think of the needs of man as being tied closely to a system of instincts. The doctrine of Freud, as an example of this, ties all needs into a system of two instincts, the life instinct and the death instinct. William McDougal whose thinking in this area dominated the American scene for the first two decades of this century developed a much more elaborate classification of needs in terms of a long list of basic instinctual tendencies.

The more recent trend has been a reversal in the direction of thinking on this topic. Much of the current thinking as it appears in the research literature stems from the work of H. A. Murray at Harvard University during the late thirties and published in the well known volume entitled "Explorations in Personality." This volume abandons the postulation of the inborn nature of need except in the case of the viscorogenic needs such as hunger, thirst, sex, and so forth. Within the Murray system there was no attempt made to tie psychological needs to inborn tendencies but rather was their genesis left as an open question. Needs were considered to represent trends in behavior that could be aroused by the presence of environmental cues. The trend manifested by a need was a goal seeking tendency that could be heightened either by the presence of suitable cues in the environment or by deprivation. As this concept of need has emerged through the later work of McClelland, Atkinson, French, and others, attempts have been made to relate the strength of need to particular aspects of the training of the person. Such research has been based upon the assumption that at least some of the psychologic needs described by Murray are generated by a learning process. The need which has been most carefully explored in this respect is achievement need.

The Needs of Teachers Studied in This Inquiry

This study was not designed to make a comprehensive survey of the needs of teachers, but rather was it regarded as an effort to relate the strength of particular needs to the behavior of the teachers in the classroom. The needs chosen were those in the Murray list which appeared to have particular relevance for predicting classroom behavior. The needs chosen for study and the postulated relation of those needs to classroom behavior are as follows:

Achievement need. This need is manifested in a trend in behavior such that the individual strives to excel or to achieve some standard of excellence. One would expect that those teachers who had this need in a high degree would project this need onto the children in a class and emphasize accomplishment in terms of high standards. Since the areas of school work in which clear-cut standards can be defined are those of academic achievement one would expect that teachers manifesting a high degree of this need would tend to be subject matter oriented and place emphasis on traditional educational values.

Murray regarded the need for achievement as including a need for recognition and, presumably, on this basis any instrument scored for achievement need would include a subscore for recognition. At the outset of this inquiry, the decision was made to keep an open mind on this matter and to determine empirically whether need for recognition should be scored separately.

Affiliation need. This need would be manifested in a trend of behavior such that the person seeks out the company of others, or, in a more extreme form seeks out other persons who will be accepting of the person involved and who will reciprocate the interacting behavior. The definition of the need excludes interactions between persons which are a product of a sex need. One may reasonably hypothesize that teachers who manifest a high degree of this need would seek out a warm and friendly relationship with children and would emphasize the development of desirable social behavior between the children themselves. Here again we hypothesize that the teacher is likely to project her own need system onto the pupil, and hence assume that the children share with her a need for social interaction.

Need for control (or need for power). This need is manifested in a behavioral trend in which the individual seeks to control others for the sake of controlling them. While the person high in achievement motivation may seek to control others in order to produce a product of excellence, the high control need person controls as an end in itself. A teacher high in this need might be expected to exercise control over the children with little other purpose than to keep them in line. While all teachers may be expected to show some degree of controlling behavior in order to perform the management functions which a teacher must perform, an excess of these controlling behaviors might be expected to be a consequence of the operation of a high control need. One might also expect to be able to differentiate between teachers who control for the sake of satisfying a control need and those who introduce control over the behavior of pupils in order to achieve some other more remote goal. Teachers may perhaps also be differentiated with respect to this need in terms of the rationalizations which they emit concerning the reasons for the control which they exercise. The teacher who states "that children have to be kept in line" may be hypothesized to be manifesting a different motive structure than a teacher who says "some degree of orderliness is necessary in the classroom in order that the business of the class may be accomplished."

The discussion of need as it is presented here represents only an introduction to the problem as it was seen at the time when the inquiry was planned. In a later chapter there will be some further elaboration of the ideas that have been presented here. At that time a more precise definition of each of the needs considered in the study will be provided.

The Plan of the Study

The first step in the research called for the development and assembly of a number of instruments designed to measure the needs of teachers in the categories which have been discussed. Since very extensive work was to be undertaken on the collection of classroom data concerning the behavior of the teachers, prudence suggested that the instruments represent a range of approaches to the measurement of needs. While the last decade has shown many promising developments with projective instruments, the scientists working on the project considered that the present research should not revolve exclusively around such devices. For this reason other more direct methods of assessing needs were considered as also were instruments which had been previously developed by other workers. Although a single chapter of this report is devoted to the discussion of the development of a single projective device for measuring needs, this represented only one of many instruments used for appraising the need structure of teachers.

The second major step in the development of the project involved the selection and application of methods of measuring teacher performance in the classroom. This is generally recognized by educational research workers to be an area in which measurement procedures have not reached a satisfactory stage of development. Indeed, not enough is known about the recording and measurement of teacher behavior to make it possible for the research worker to specify with any precision the general characteristics of the teaching methodology that any particular teacher may pursue. While some progress has been made in recent years in the identification of measureable aspects of the classroom behavior of teachers, the techniques available are exploratory rather than established. In addition, the dimensions of teacher behavior which have been developed through previous research are not entirely relevant for the purposes of this inquiry.

The third step was to involve the study of relationships between the performance of the teachers in the classroom and the characteristics of the teachers as measured by the various testing devices.

CHAPTER II

DEVELOPMENT OF AN INSTRUMENT FOR MEASURING TEACHER MOTIVATION

The first task in the development of the research was to survey current technical literature on the measurement of motivation and to identify those approaches which appeared to offer promise. The most notable development in this area in the midcentury era was the emergence of a number of projective instruments for the measurement of need following the pattern set by H. A. Murray nearly twenty years earlier. Some of these instruments involved picture interpretation techniques while others were restricted to the use of both verbal stimuli and verbal responses. The research literature does not particularly favor one of the other of these approaches for there are studies using both types of instruments which have resulted in successful predictions. The convenience of using an instrument which involved only verbal materials led to the development of such an instrument for use in the present study. This instrument was named the Utah Study of Behavior.

The Utah Study of Behavior is an instrument designed to measure needs within the general framework of need theory as originally formulated by H. A. Murray. The definition of need provided by Murray is a complex one and covers over 100 pages of the book which he and his associates authored (1938). Only certain elements of this definition have been assimilated into later thinking in psychology and the technical terminology proposed by Murray has been largely abandoned. According to Murray a need is manifested as a typical behavioral trend which acts to change an existing situation in a particular direction. A person who has a high need for affiliating with others manifests activity related to the satisfaction of that need. However, there is also a second way in which needs are manifested and this is through the tendency to respond to certain aspects of the environment which are related to the needs. The hungry person is more likely to respond to food objects than to other objects.

Murray referred to aspects of the environment which have the capability of eliciting such goal oriented behavior as examples of *press*. The same concept would be stated to-day by saying that certain objects and events in the environment have the property of arousing needs.

The level of need is then a product of both an internal and an external condition. An adequate definition of a need must specify not only the trend manifested in behavior but also the conditions in the environment that produce arousal of this trend.

Murray's classification of needs, the viscerogenic and the psychogenic needs, has had a major influence on contemporary psychology because it has led to the development of both psychological theories and measuring devices through which the predictive value of the theories could be tested.

The instrument developed in Murray's laboratory for the measurement of need was the Thematic Apperception Test, a device which established the main features of measurement procedures in this area. Instruments available to-day for the measurement of need structure show most of the features incorporated in Murray's instrument and the instrument described in this chapter is no exception. The first characteristic is a set of ambiguous stimuli, in the case of the Murray test this consisted of 20 pictures. However, the picture cannot provide any kind of ambiguous situation, but must be such that persons with high needs in particular directions will perceive in the pictures objects and situations related to the needs. The value of the pictures for measuring needs is dependent upon the tendency for individuals with high levels of need to seek out and respond to aspects of the environment related to that need. While the Murray pictures are designed to suggest many common situations where human needs operate at high levels, each picture is such that many interpretations may be given of the situation presented. A second characteristic of the measurement procedure is that the person taking the test is given some guide concerning the way in which he is to respond. In the Thematic Apperception Test each picture is presented to the subject and he is required to answer three questions about the picture which are (1) What is happening? (2) How are the people thinking and feeling? and (3) How does the story come out? The assumption is that since the responses of the subject cannot be determined entirely by the external stimuli, namely the pictures themselves, they must be partly determined by internal conditions. Hence it is possible by this technique to measure internal conditions such as need.

Purposes

The Utah Study of Behavior (hereafter abbreviated to USB) is a projective instrument developed within the general theoretical framework of need theory as originally formulated by Murray and subsequently elaborated by McClelland, Atkinson, et al.

While the *Thematic Apperception Tests* provided the basic model after which all subsequent instruments in this area have been developed not all have used pictures as a means of providing ambiguous stimuli. The test described in this document present situations in words rather than in pictures and is patterned after an instrument developed by Elizabeth G. French entitled *A Test of Insight* (1956). In the latter test, each item provides a description of a person's behavior and the test problem is to (1) give the reason why the person behaves as he does; (2) decide what the man is like, what he wants to have or do; and (3) (3) what the results of his behavior are apt to be. The answers given by most subjects to such test problems are rather short and are rarely more than 100 words in the test format used by French where the space provided for answering is approximately two inches by eight. The test described in this manual is patterned after French's instrument.

The USB provides quantitative measures which are intended to reflect the strength of four needs: Achievement, Affiliation, Recognition, and Control. The theoretical properties of these needs are discussed in subsequent paragraphs.

Theoretical Considerations

The term need, as it is used here, is a hypothetical construct having two characteristics. First, it is assumed that certain classes of observable events will have the property of arousing or energizing an individual in direct proportion to the strength of the appropriate need in the individual. Second, it is assumed that the occurrence of specified events, subsequent to a given behavior will tend to increase the probability of such behavior i.e. will serve as reinforcers. Thus a need is defined here by spelling out the classes of occurrences which will activate the person inferred to have the need and classes of occurrences which will serve as reinforcers to the person having the given need. The following are our definitions of the four needs presumed to be measured by the USB.

1. Achievement need.

Arousal conditions: Any environmental events which make explicit evaluation of the individual's behavior in terms of a standard. Some examples are given below:

- a. Statements to the individual that his behavior is being evaluated.
- b. Situations which in the past have been associated with evaluation such as tests, school situations, etc.
- c. Any clearly defined problem to which the persons attention is directed, e.g. how to design a new piece of machinery; how to climb a mountain, etc. It is recognized that arousal conditions will be largely culturally determined.

Reinforcing conditions: Any external events which denote favorable performance in terms of the standard. In some cases this would be obvious, as when a mountain is climbed. In other instances the requisite information may depend upon the reactions of others, but they reinforce responses only to the extent that they enable the person to compare himself to a standard.

The writers are presently attempting to relate this need to the notions of hereditary manipulation or curiosity needs as studied by Harlow (1953) and the idea of competence as recently discussed by White (1959).

2. Affiliation.

Arousal conditions: Any environmental situations that depart from an objectively definable moderate level of social interaction. Thus we assume that affiliation need is aroused either by relative isolation from other humans or by intimate contact. At present we assume that both conditions function similarly with respect to arousing affiliative motivation.

Reinforcing conditions: Increased contact with other people. At a minimal level, this is taken to mean merely being physically near other people, as in a restaurant. At its extreme it is taken to mean intimate behavioral interaction with another person or persons but excluding relations directed towards the satisfaction of sexual needs.

This need is assumed to be, to a degree, genetically determined and closely approximates the dimension of "gregariousness" as discussed by Diamond (1951) and others.

3. Recognition.

Arousal conditions: Any situation which objectively affords the possibility of the person being the object of attention of other persons. Examples would be asking the person to adopt the role of leader, placing him on exhibit, etc. It is clear that many situations which would be capable of arousing recognition need would also be capable of arousing affiliation need. There are differentiating examples however, e.g. we would assume that recognition need would be aroused by an invitation to deliver a television lecture whereas affiliation would not be thus aroused. Again, we would assume that a quiet evening at home might be an arousal condition for affiliation but not for recognition.

Reinforcing conditions: Any responses from other persons which are directed toward the individual. Thus we would expect any reaction from others to be minimally reinforcing. A stronger class of reinforcers would be emotionally negative reactions to the person and emotionally positive reactions are assumed to be the strongest reinforcers.

4. Control.

Arousal conditions: Any situation which objectively affords the possibility of controlling the behavior of others. Once again there is considerable overlap with situations capable of arousing recognition or affiliation but differentiating examples would be as follows:

a. Control but not Recognition: being offered a position as a behind-the-scenes business executive.

b. Recognition but not Control: being considered for a scholarship.

c. Control but not Affiliation: being offered a position as drill sergeant.

d. Affiliation but not Control: being offered a position as servant.

Reinforcing conditions: Behavior of others which is in accord with the attempt to influence them. Behavior which involves obedience of others, concurrence with plans, flattery from subordinates, and approval from prestige sources for exercising authority, are all presumed to reinforce a controlling need.

Control, as the term is used here, is not closely related to the Adlerian concept of power, which is more similar to achievement need. Rather is a control need related to aggression as discussed by Diamond (1957) and others.

Development of the Items

Some of the items in the test were adapted directly from the instrument developed by French which has already been mentioned. Modifications in the items were considered necessary for a number of reasons.

The French test had been administered to groups of airmen that varied in educational level from a few grades of elementary school to a Bachelors degree. The vast majority were high-school graduates with no college education. In contrast, the population to be tested by the new test was one which had uniformly been exposed to a college education and had met the professional certification requirements for teaching. While the population tested with the French test was probably average of the total population in level of general intelligence, the population to be studied with the new instrument was considerably above average in this respect. Indeed, the teachers who were included in the population studied were such that one might expect at least 90 percent of them to come from the top ten percent of the population. For this reason the immediate reaction of the writers was that the population to be tested would easily "see through" the items that appear on the French test and that much more subtle items would be required if they were to provide distributions of scores. Much to the surprise of the research staff this did not turn out to be the case. The items which lacked subtlety and which were quite obviously describing behavior related to a particular need tended to give excellent distributions of scores, while those which had only a rather subtle relationship to a particular need tended to provide poor distributions of scores. For this reason the test, as it finally evolved, consisted of items which display a fairly obvious relationship between the behavior described and the need to be measured.

The items in the French test made reference exclusively to male figures, a practice which seems appropriate in view of the fact that the instrument was to be administered to male subjects. Presumably, men may be expected to identify more easily with male figures than with female figures. Following this rationale, the Utah Study of Behavior was constructed using items which mentioned only female figures, since the plan was to use it mainly with female subjects. The hypothesis was that female subjects would identify more easily with females and hence project their needs more easily onto females than they would onto males. This hypothesis does not seem to have been born out by later experience with the items. Males appear to have no difficulty in responding to the items which refer to female figures. Males also provide approximately the same amount of imagery as females which suggests that the sex of the character included in the items has little to do with the scores derived from the test.

Our experience in developing this type of measuring instrument suggests that the following criteria might well be adopted in the preparation of items:

1. The statements should describe behavior which has a fairly obvious relationship to the need that it is proposed to measure.

2. The behavior described should be a fairly commonly occurring behavior and one with which the person taking the test should have some familiarity.

3. The item should not arouse any needs other than that which it is designed to arouse.

4. The item of behavior should be such that many interpretations of the behavior involved are plausible.

The last two criteria are quite important. If an item arouses two of the needs that are to be measured, then it may introduce a conflict between the two needs. Under such circumstances one may presume that the stronger of the two needs will operate on the response and be manifested in the response. But this is not what one wants to do in a situation designed to provide a normative system of measurement. If such a conflict is introduced, then the instrument tends to provide measures of the relative strength of the needs and the instrument no longer provides a normative scale. Our purpose in developing the present instrument was not to measure the relative strength of needs within each individual but to provide an instrument which would permit a comparison between one individual and another in terms of absolute strength of need.

Items in Form A and Form B were selected after preliminary tryout of four forms each containing thirty items, thus giving an initial item pool of 120 items. Each form was administered to approximately thirty female undergraduates and the following item statistics were obtained:

a. Sum of scoring disagreements across subjects

b. The range of scores across subjects

c. The variance of scores across subjects

d. The correlation with total scores on the appropriate need

e. The number of subjects for whom zero scores were obtained

Although these statistics may have somewhat low reliability, owing to the small numbers of cases involved, the investigators were of the opinion that they provided a better basis for item selection than would a purely subjective judgment of the worth on an item. Those items were selected which were judged to have the best combination of such properties as good scoring agreement, large range and variance of scores, low number of zero scores and large correlation with total score. The last factor was given the least weight in judging the merit of the item.

Out of the original pool of 120 items, 48 were retained. Of these items, 12 represented each need. Each item also was such that it elicited responses mainly for one need. These items were assembled into two forms of the instrument and care was taken to place items in the two forms in such a way that items with any apparent similarity were placed in separate forms. One additional item was also added, namely, an achievement need item which was intended to elicit fear of failure responses.

Our original plan was to develop an instrument which would measure three needs,--achievement, affiliation, and control. During the item construction process difficulties were encountered in grouping together behavior directed towards the achievement of a standard of excellence and behavior directed towards the attainment of recognition. In Murray's (1938) original discussion of the matter he referred to recognition need as an aspect of achievement need. The implication was that the measurement of achievement need would require the measurement of recognition need. The research staff considered that a much more satisfactory hypothesis would be that recognition need should be considered as a distinct and separate need from that part of achievement need which involves the attainment of a standard of excellence. With this end in mind the decision was made that the preliminary forms of the test should include a sufficient number of trial items designed to measure a recognition need so that this need could be measured as a separate variable in the final forms. The final decision whether to measure recognition need separately or whether to include it within the category of achievement need was to be based on empirical data. Statistical independence of achievement need and recognition need was to be the criterion. Data presented later in this chapter will justify the decision which finally emerged to measure recognition need as a separate variable.

Format

The device in its present form consists of brief statements of behavior, opinions, or attitudes of teachers. The respondent is required to fill in explanations of the behavior in the space provided and within the framework indicated in the directions. He must indicate what (1) the woman is like, (2) what she wants to do or have and (3) what the results of her behavior are likely to be for her.

Six items are involved in obtaining measures of affiliation need, recognition need and control need. In some of the later research on this device three additional affiliation need items were added at the end of the test in an attempt to improve the reliability of the affiliation need score. The form which included the three additional items is referred to as Form 2A. Most of the data reported in this chapter refer to Form A and Form B, unless it is otherwise stated.

Examples of the items are as follows:

1. Mary said, "They probably won't ask me to go with them."
2. Janice is always trying something new.

The item in Form 2A and B are given in Appendix I together with the directions included in the test booklet.

Scoring

Two scoring procedures were devised. The first follows that developed by McClelland (1953) and his associates which was later used and modified by French (1956). This procedure, referred to as category scoring, requires a scorer to examine the responses to each item in great detail and to analyze them according to a carefully laid out scheme. The second is a rating procedure which is much more rapid and requires less detailed analysis. Each one of these procedures will be considered separately.

Category Scoring

In the category scoring procedure the first step is to determine whether the response as a whole does or does not indicate the presence of imagery related to the need which is to be measured. If it is determined that the response as a whole or part of the response does not refer to the need to be measured then the response is not scored further. On the other hand if the need is manifested in the response then the scorer embarks on a much more detailed system of scoring. The presence of the need is scored one point, but once an item has been given this point it can also be assigned a number of other points in so far as it manifests other characteristics. The further analysis of the item proceeds according to the following paradigm:

1. A need exists.
2. A specific goal is sought.
3. Instrumental activity or response occurs.
4. Characteristics of the individual facilitate or deter attainment of the goal.
5. Characteristics of the environment facilitate or deter goal attainment.
6. The goal is attained or not attained.
7. The person experiences emotional reaction to the attainment of failure to attain the goal.
8. The person reacts to failure if it occurs.

The paradigm is applied in this way. First the response is broken down into a series of utterances, each of which is a series of words conveying a single and central idea related to this paradigm. Thus if part of a response reads "She does not have the ability to achieve her goal in life," this would be said to convey two ideas. The first is that she does not have the necessary ability, an utterance related to item 4 in the above paradigm. The second is that she probably will not attain her goal which is related to item 6 of the paradigm.

Each item in the paradigm provides a basis for assigning a unit score to the response. However, the response is scored only once for each part of the paradigm. If the response which has just been discussed were to continue with other references to other deficiencies in the person's abilities which made the goal difficult to achieve, additional points would not be given for these additional references.

Negative comments are scored in exactly the same way as positive comments. A person who writes in response to an item "She will probably never achieve the skill she wants to achieve," is given a point under the achievement need category of "goal attained or not attained." This point is given even though the response implies failure. Responses which refer to failure are scored positively just as are those which refer to goal attainment. Some psychologists have suggested that fear of failure responses should be treated differently from success responses. In the present case we have followed the practice of McClelland and have pooled the fear of failure responses with the success responses.

A complete description of the rules applied in the category scoring system is given in Appendix II.

After considerable experience in developing and using this technique the following interscorer agreements were attained: (N=98) achievement .64, affiliation .79, recognition .80, and control .70. Throughout our work, we have felt considerable dissatisfaction with this scoring technique, and have been disappointed in not achieving better scoring agreement.

Scoring by Rating

Those engaged in scoring by the category procedure expressed considerable dissatisfaction with it almost from the beginning. However much the directions were worked over and amplified scorers still failed to agree on the way in which particular utterances should be scored. There was also the growing impression that the category scoring system often failed to give as much credit for the manifestation of a need as it should. A response to an item might be fairly long and although each utterance of which it was composed might not be scorable in terms of the categories used the total impression might be one of considerable imagery. This observation led to the suggestion that a procedure for rating the total responses for imagery might be much more satisfactory than the category scoring procedure. In the rating procedure for scoring, the response to an item is evaluated in terms of the following scale:

0 = no need imagery
1 = doubtful need imagery
2 = clear need imagery
3 = clear and strong need imagery
4 = clear and very strong need imagery

The practice adopted in the research project was to rate the responses to one item for all of the respondents to the test that were to be scored at a particular time. This rating procedure can be undertaken quite rapidly, which is an advantage in itself, but the evidence which follows also indicates that the resulting scores are quite closely related to the scores derived from the category scoring procedure. Before presenting evidence related to the agreement of category and rating scores the reader should be aware of the fact that those who scored the response by the rating technique were also experienced category scorers. Whether equally satisfactory agreement between the two systems of scoring could be achieved by raters unfamiliar with the category system of scoring is not known at this time.

Agreements between two raters for the same 98 cases reported in the previous section but with different scorers were as follows: achievement .82, affiliation .77, recognition .85, and control .79. Mean scores assigned by the two category scorers were obtained and correlated with the mean ratings assigned by the two raters with results shown in Table 2.01. Inasmuch as the correlations between category and rating methods is about as high as one could expect (after allowing for the greater precision of scores based on two rather than one scorer) and since the rating procedure tends to provide equal or superior scoring agreement, we have tended to adopt the faster rating method. Additional support for the rating approach is discussed in the section on validity. *

Table 2.01

Scoring Agreement (2 scores) for Category and Rating Scores
and Rating vs. Category Correlations N = 98

Need	Category Inter-Scorer Agreement	Rating Inter-Scorer Agreement	Agreement of Category and Rating Scores
Achievement	.64	.82	.79
Affiliation	.79	.77	.81
Recognition	.80	.85	.89
Control	.70	.79	.85

Reliability

Parallel form reliability coefficients have been obtained for a sample of 49 cases. The initial testing utilized Form A, the re-testing, six weeks later used Form B. The results, shown in Table 2.02 indicate fairly good stability for all but the affiliation score. Although these reliabilities are quite low in comparison to the usual findings with ability tests or questionnaire measures, they are consistent with

* Several of our earlier validity studies utilized the category scoring procedure and this fact is noted where applicable.

the few comparable reliabilities on this type of measure which have been reported in the literature. Two explanations for the general low level of magnitude of these reliabilities have been offered. The first is that the score merely reflects the momentary level of the need and that the need level is itself highly variable due to the great importance of immediate arousal circumstances and their differential effect on different persons. While such an explanation is quite possible within the general theory on which these devices were developed, it is hardly an optimistic explanation since it means that one must give considerable attention to analysis of the precise conditions under which the device is taken and then restrict any generalization to behavior within the same environmental conditions. Previous studies which have found relationships between similar types of need scores and other variables such as home environment, task performance and selective recall seem to argue against this explanation. A second explanation suggested by Atkinson (1958, p. 19) is that one testing "spoils" the subject; that further testings are affected by the initial experience.

Table 2.02

Alternate Forms Reliability--Six Week Interval

Need	Category	Rating
Achievement	.41	.43
Affiliation	.35	.17
Recognition	.47	.54
Control	.48	.49

Relationships Among Measures of Needs

Some independence has been found in previous studies for measures of achievement need, affiliation need, and status need (or what we call here control need). Recognition need hardly seems to have been considered as a separate need and, as far as the writers can determine, no effort has been made to develop independent measures of it. Unless the measures derived from our instrument show some independence one from the other, the claim that it measures four separate variables cannot be made. Table 2.03 shows the correlation between the measures of need as derived from a category system of scoring. Subjects were undergraduate students.

Table 2.03

Correlation between category scores for Form A on each of the four needs. The data for 98 females and 46 males are reported separately.

	Ach.	Aff.	Rec.	
Aff.	.22			
Rec.	.00	.22		N = 98 females
Con.	.17	.05	.33	

	Ach.	Aff.	Rec.	
Aff.	-.08			
Rec.	-.16	-.41		N = 46 males
Con.	-.28	-.18	-.11	

The data indicate that the relationship between the measures of need are satisfactorily low. Indeed, there are few test batteries providing normative systems of scores which have as low relationships between scores. The two matrices for men and for women seem to show considerable differences and perhaps reflect a difference in the structure of needs for men and for women. This is a matter which needs further exploration.

Similar data is available for the female population for scores derived from ratings. The correlations derived from the ratings are strikingly similar to those derived from the category scores and are presented in Table 2.04.

Table 2.04

Correlations between rating scores on each of four needs for 98 students.

	Ach.	Aff.	Rec.
Aff.	.15		
Rec.	.04	.14	
Con.	.23	.05	.38

Although the relationships shown in Table 2.03 and Table 2.04 are satisfactorily low, a sample of teachers studied later in the research on whom the criteria data were collected showed much higher correlations between variables. These correlations are shown in Table 2.05 and will be discussed at greater length later in the report.

Table 2.05

Relationship between rating scores for each of four needs
for 77 teachers.

	Ach.	Aff.	Rec.
Aff.	.42		
Rec.	.23	.38	
Con.	.19	.48	.47

Sex Differences

In the development of the test it had been hypothesized that the use of female characters in the test items would facilitate the identification process in the case of female subjects and that this practice would result in both increased mean scores and increased ranges of scores. For this reason there is considerable interest in making a comparison of the means and standard deviations of the scores on each need for men and for women. This comparison is made in Table 2.06.

Table 2.06

Comparison of Scores Made By 98 Female College Students
and 46 Male College Students On Each Need.
The Scores Are Derived From Category
Scoring Form A.

	Achievement		Affiliation		Recognition		Control	
	M	F	M	F	M	F	M	F
Mean	9.06	9.00	10.63	11.71	9.73	7.89	6.53	7.28
S.D.	3.81	3.21	3.94	3.02	4.04	3.51	2.89	2.92

The means and the standard deviations for men and for women are approximately the same. The greatest difference is the area of recognition need, but this difference does not reach significance at the five percent level. The data suggest that the use of female characters in the test has not had any particular effect on the mean or distribution of scores for any need.

Validity

In the initial attempts to study the validity of need scores, a number of variables were investigated which have been shown to be related to measures of need in prior research, principally in studies conducted by Atkinson (1958) et al and by French (1955). A brief summary of each of these studies follows:

1. Ziegarnik effect and Achievement Need (category score). Wodtke (1960) employed a three by two factorial design with a total of 48 female undergraduate subjects. Three categories of need score (high, middle and low) were used along with two conditions of arousal for the Ziegarnik tasks. Under one condition the experimenter presented the tasks as a set of experimental tests and attempted to establish a non-threatening atmosphere whereas the other condition stressed the importance of the tests and the necessity of performing as well as possible. The Ziegarnik effect was measured by having each subject perform a series of twenty tasks, half of which were short enough to be completed by most subjects and half of which were long enough to be completed by very few within the time limit. After completing the tasks, a picture drawing task was administered, following which the subjects listed all of the previous tasks they could recall. A percentage recall score was obtained for both the completed and incompleted tasks for each subject and the difference between the two scores provided the measure of Ziegarnik effect. As predicted, a significant interaction between need level and experimental conditions was found, indicating that the USB N Achievement score does differentiate among individuals with regard to selective recall dimensions. The precise nature of the interaction, however, is not in accord with predictions made on the basis of prior research. As predicted, the higher need groups showed greater recall preference for incompleted as opposed to completed tasks than did the low group in the relaxed condition. Under the arousal or threatening conditions, however, the higher need groups showed a preferential recall of completed tasks, a result which was expected for the middle need group, but not for the high need group.

2. A similar analysis was performed by Reid (1960) for a group of 42 male upper classmen. In this instance no significant interaction was obtained. However, a very definite arousal phenomenon was demonstrated and the subjects showed a large increase in the number of completed tasks recalled under conditions involving the arousal of the need. There was also a significant relationship at the five percent level between need achievement level and Ziegarnik affect under the aroused condition. However, under the relaxed condition significance was only at the ten percent level. The latter data are presented in graphical from in Figure 1 and present a convincing picture of the relationship through the clean-cut nature of the trend. The overall consistency of the picture presented by the graphs supplies a certain strength to the relationship which it is presumed to demonstrate.

3. Performance on simple tasks (rating score). In a study by Christensen (1960) the same tasks used for the Ziegarnik studies were scored for accuracy of performance and correlations obtained between each of the four need measures and a total performance score. Table 2.07 presents the correlations under both relaxed and achievement arousal conditions. As predicted, the relationship with achievement need is significant under the arousal condition. It is also of interest to note the

6

change in correlation with affiliation from .13 relaxed to -.15 arousal. This difference, though not significant is in accord with theoretical expectation and previous research. Table 2.07 also presents the same data where the rating scores as well as category need scores were used.

Table 2.07

Correlations Between Need Scores and Performance

Need	Achievement Arousal		Relaxed	
	Rating	Category	Rating	Category
Achievement	.27	.22	.02	-.07
Affiliation	-.15	-.16	.13	.10
Recognition	-.05	.00	.07	.03
Control	.10	.08	-.06	-.22

4. In a study conducted by Jorgenson (1960) scores derived from the USB were correlated with certain aspects of performance in college. The relationship between the USB scores and grade point average are shown in Table 2.08. This Table also shows the relationship between the USB scores and scores on the various parts of the Cooperative English Test which is used at the University of Utah as one of the important selection devices for admitting students to the University. There is no way of knowing at this time the extent to which the small correlations between the need measures and the parts of the English test are produced by motivational factors influencing performance on the Cooperative English Test or whether the need measures include an intellectual component. The relationship of the achievement need score to grade point average is similar to that which has been found in other studies. Of some interest is the fact that the control need measure is also related to grade point average although this measure is largely independent of the achievement need measure. These data leave one wondering whether academic accomplishment is regarded by high control need students as an avenue which ultimately may lead to the satisfaction of a control need.

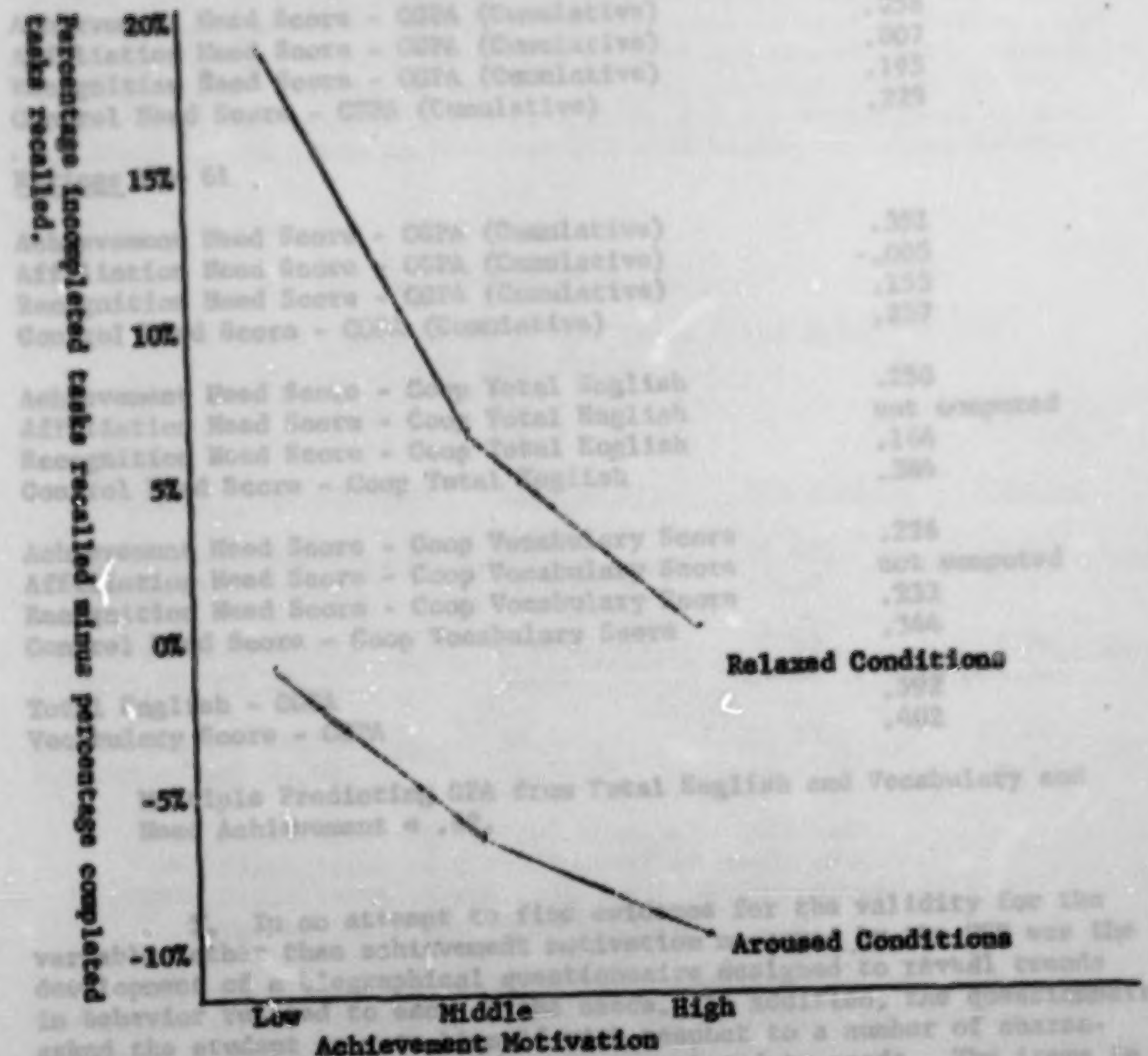

FIGURE 2.01

MEAN DIFFERENCES IN PERCENTAGE COMPLETED TASKS RECALLED AND PERCENTAGE INCOMPLETED TASKS RECALLED FOR LOW, MIDDLE AND HIGH NEED ACHIEVEMENT GROUPS UNDER RELAXED AND AROUSED EXPERIMENTAL CONDITIONS

Table 2.08

Relationship between Need Scores and Grade Point Average and the Scores on the Cooperative English Test

CPGA = Cumulative Grade Point Average

Category Scoring System N = 61	
Achievement Need Score - CGPA (Cumulative)	.258
Affiliation Need Score - CGPA (Cumulative)	.007
Recognition Need Score - CGPA (Cumulative)	.195
Control Need Score - CGPA (Cumulative)	.229
Ratings N = 61	
Achievement Need Score - CGPA (Cumulative)	.351
Affiliation Need Score - CGPA (Cumulative)	-.005
Recognition Need Score - CGPA (Cumulative)	.153
Control Need Score - CGPA (Cumulative)	.257
Achievement Need Score - Coop Total English	.250
Affiliation Need Score - Coop Total English	not computed
Recognition Need Score - Coop Total English	.164
Control Need Score - Coop Total English	.384
Achievement Need Score - Coop Vocabulary Score	.226
Affiliation Need Score - Coop Vocabulary Score	not computed
Recognition Need Score - Coop Vocabulary Score	.233
Control Need Score - Coop Vocabulary Score	.344
Total English - CGPA	.592
Vocabulary Score - CGPA	.402

Multiple Predicting GPA from Total English and Vocabulary and Need Achievement = .62.

5. In an attempt to find evidence for the validity for the variables other than achievement motivation measured by the USB was the development of a biographical questionnaire designed to reveal trends in behavior related to each of the needs. In addition, the questionnaire asked the student to rate himself with respect to a number of characteristics which were hypothesized to be related to needs. The items in the questionnaire were assembled on the basis of a review of available research studies in which scores from the French type instrument or the TAT type instrument had been correlated with measures of other variables. The questionnaire developed by this process is given in Appendix 3.

The questionnaire was administered to 49 female students, mainly students in the college of education on whom need scores based on the category system had been obtained. No significant relationships could be found between the need scores and the questionnaire variables, a finding which raises a number of questions.

6. One additional validity study was conducted on the USB. If the USB were measuring the needs it was designed to measure, then groups presumed to be high on one particular need would be expected to obtain higher scores on the USB scale designed to measure that need. Three groups were chosen for study which appeared on a priori grounds to be high on three of the needs measured by the USB. The groups chosen were graduate students in social work, prison guards, and women graduate students in the physical sciences and mathematics. It was expected that the social workers would be relatively high on need for affiliation, the prison guards relatively high on need to control, and the women science majors relatively high on achievement need. Twenty-eight graduate students in social work, twenty-eight prison guards, and seventeen science majors were tested, and the comparisons between the means of the group on the four USB need scales are shown in Table 2.09.

Table 2.09

Means and t-tests Comparisons of the Three Known Groups on the USB Need Scales

Groups Compared	Achievement	Affiliation	Recognition	Control
Social workers Prison guards	22.57 16.50 (3.16**)	36.61 28.26 (4.00***)	20.89 13.93 (4.52***)	19.82 15.00 (3.19**)
Social workers Science majors	22.57 21.00 (.64)	36.61 30.94 (2.95**)	20.89 16.41 (2.64*)	19.82 14.35 (2.68*)
Prison guards Science majors	16.50 21.00 (2.12*)	28.26 30.94 (1.11)	13.93 16.41 (1.49)	15.00 14.35 (.32)

* Significant at the .05 level of confidence.
** Significant at the .01 level of confidence.
*** Significant at the .001 level of confidence.
Values for t are in parentheses.

The means reported in Table 2.09 are based upon the combined raw scores of two scorers using the rating procedure for scoring the USB tests. The mean differences between the four scales for particular groups were not compared since these scores are derived from scales which contain different numbers of items. One aspect of Table 2.09 makes one skeptical concerning the significant differences obtained. Although many of the differences are significant and in the expected direction, the social workers obtained the highest means across all scales, the prison guards obtained the lowest means, and the science majors obtained means somewhere in between. One suspects that the differences between the means of the three groups may be due to a social desirability factor or general response set, or possibly the social workers are simply more vigorous in their responses to projective measures. In order to control for the possibility of a general response tendency and to take out the differences between scales, due to differences in the numbers of items, the raw score means were adjusted. This was done by first arranging the raw score means in a table similar to Table 2.09, and the totals for columns and the totals for rows were obtained by adding the means. The mean of the columns totals was then obtained as was the mean of the row totals. Each raw score mean was adjusted across the USB scales and across groups by multiplying it by the fraction of the particular column or row total over the mean of the column or row totals. By making such an adjustment for both the dimensions of groups and scales, one can obtain the table of adjusted means shown in Table 2.10. It can be seen in this table that the adjustment has the effect of equalizing the columns totals and equalizing the rows totals.

An important point to note is that in Table 2.10, the science majors are highest in achievement need and the prison guards are highest in control need. The social workers excell in recognition need, a finding which is not unreasonable. At this stage, it occurred to the project staff that the adjustments which had been made were similar to a two-way analysis of variance in that the effect of both main treatments had been removed and Table 2.10 represented the interaction effects. The overall significance of the latter could be tested by undertaking an analysis of variance on the original scores. This analysis was undertaken but the sum of squares for the interaction for six degrees of freedom did not reach the five per cent level of significance. This latter result could be a consequence of the fact that most of the criterion effect is evident in only three cells and this effect is deleted in an overall analysis which pools the various interactions.

Table 2.10

Adjusted Means for the Three Known Groups on the USB Need Scales

	Social Workers	Guards	Science Majors	Totals
Achievement	20.47	20.48	23.26	64.21
Affiliation	20.82	21.99	21.49	64.30
Recognition	22.21	20.27	21.31	63.79
Control	21.96	22.73	19.41	64.10
Totals	85.46	85.47	85.47	256.40

This finding leaves one in a position of conflict with respect to these data. One of the problems with the adjustments which were made to equate the groups was that there was no way of determining exactly what the adjustment was doing to the data. If the adjustment controlled only response tendency, then it must be concluded that the USB did not discriminate between the three groups studied. On the other hand, it is also possible that the adjustment controlled real differences in need level between the groups. The graduate students in social work may have generally higher levels of needs than the other two groups. If this were the case then the significant differences reported in Table 2.09 provide support for the validity of the USB as a measure of need.

7. The results of the studies reported here led the investigators to go back and take another look at the literature pertaining to devices for measuring needs from which the following facts appear to emerge:

1. While achievement need as measured by available instruments is a relatively strong variable showing fairly clear relationships with other variables, the remaining measures of need represent weak variables.

2. Few relationships are found between affiliation need, status need, and other variables unless the experimenter makes comparisons between extreme groups which have been selected to maximize relationships.

Despite the poor showing of some of these variables in the research, the decision was made to retain them in further aspects of the study.

Correlations With Other Tests

An important part of the study of any instrument is the study of the relationship of scores on the instrument with scores on similar tests. In the present case, there was little point in relating scores derived from the USB with scores derived from French's Test of Insight (1956) since items from the latter test, with minor modifications, were already included in it. A more obvious comparison was with scores derived from a TAT-type test. For this purpose a number of pictures were obtained which had been used for the purpose of eliciting both achievement and affiliation imagery.

A total of 12 TAT-type pictures were administered during two sessions. The multiple-purpose sequence developed by McClelland for the measurement of Achievement, Affiliation, and Control needs was administered during the first session. This sequence utilized six pictures which are identified, following Atkinson's nomenclature (1958), as 5, 28, 83, 9, 24, and 53. The responses to all of the pictures were scored for both Achievement need and Affiliation need.

Two sequences were administered during the second session. Three of the four pictures recommended by Atkinson for the measurement of Achievement need (1958, p. 834) constituted the first sequence which was scored for Achievement need. This sequence, which is also one of McClelland's equivalent forms (1953, p. 192) included pictures 2, 1, and 7, listed in the order of presentation.

The second sequence, pictures 85, 87, and 81 were scored for Affiliation need. These consist of three of the four pictures recommended by Atkinson (1958, p. 835) for the measurement of affiliation need, the remaining picture having been included in the multiple purpose sequence of the first session.

Relationships between the USB scores and the TAT-type test scores were rather small in the case of the group of 24 subjects that were thus studied. The USB achievement need scores correlated with achievement need scores derived from the pictures to the extent of 0.29. The USB affiliation need scores correlated 0.18 with the affiliation need scores derived from the pictures. Even more disturbing was the fact that the measures of achievement need derived from the two sets of pictures correlated only to the extent of 0.08 and the corresponding correlation for affiliation need was only 0.06. While the sample is small, the suggested inference is that the two sets of pictures are not measuring to any appreciable extent the same variables. Also, the USB under the condition of administration measures different variables from the TAT type of test. The relationships are summarized in Table 2.11. Not all of the relationships are presented since the labor of scoring, which this would have required, involved more time than could be devoted to it.

Table 2.11

Correlations Between USB and TAT Measures of Achievement and Affiliation Needs and the Reliability of TAT Measures
(N = 24 to 29)

	TAT Ach. 1	TAT Ach. 2	TAT Ach. (total)	TAT Aff. 1	TAT Aff. 2	TAT Aff. (total)
USB Ach.	.08	.29	.21			
USB Aff.				.11	.16	.18
TAT Ach.-I		.08				
TAT Aff.-I					.06	

Norms

The provision of norms for a device such as the one presented here results in special problems which have not at this time been solved. What is said here about norms for the USB could also be said about norms for any projective device at present available. The basic difficulty in providing norms stems from the difficulties involved in the application of the scoring procedure. However well a scoring procedure is specified for such a device, there appears to be no way to ensure that two scorers will arrive at numerically equal scores. The fact that inter-scorer agreement may be high as measured by a correlation coefficient does not mean that the scorers obtained nearly the same scores. One scorer can be consistently higher than the other and yet the two sets of scores may be highly correlated. Customary measures of inter-scorer reliability do not take into account what may be termed constant errors in scoring behavior. This means that the score of an individual cannot be interpreted in terms of the norms unless one can establish the tendency of the scorer to score high or low. This cannot be done at the present time. The distributions in Tables 2.12-2.14 cannot serve the purpose which the norms of questionnaire tests usually serve.

What then is the purpose of providing distribution of scores for a test such as the USB? Normative data were included in this chapter because the authors had the impression that other research workers might wish to inspect the distributions of scores obtained in order to make rough comparisons with their own distributions. Gross differences might suggest that the scoring procedures adopted differed in some significant way from those described in this chapter. The normative data provided can be used as a rough check on the scoring procedure.

Table 2.12

98 Female College Students
Form A
Category Scoring
Test Administered Under Neutral Conditions

Score	Frequency			
	Achievement Need	Affiliation Need	Recognition Need	Control Need
20	1			
19		1		
18		2		
17	1	2		
16		3	1	
15	5	7	1	
14	1	9	3	1
13	2	12	3	1
12	3	13	7	6
11	7	14	8	6
10	17	10	7	5
9	20	9	12	13
8	10	5	9	12
7	9	4	6	9
6	7	4	12	15
5	6	3	10	14
4	4		10	6
3	4		4	2
2			0	6
1	1		2	2
0			3	

Table 2.13 (continued)

98 Female College Students
Form A
Rating Scoring
Test Administered Under Neutral Conditions

Score	Frequency			
	Achievement Need	Affiliation Need	Recognition Need	Control Need
20				
19				
18				
17	1			
16	0	2		
15	2	5		1
14	4	8	5	2
13	6	16	8	5
12	6	16	6	9
11	13	12	12	8
10	10	17	14	11
9	16	12	10	19
8	14	6	7	15
7	7	3	6	9
6	8	0	11	8
5	5	0	9	4
4	5	1	5	2
3	1		2	2
2			0	1
1			0	2
0			3	

Table 2.14 (continued)

51 Male College Students
Form A
Category Scoring
Test Administered Under Neutral Conditions

Score	Frequency			
	Achievement Need	Affiliation Need	Recognition Need	Control Need
23			1	
22			0	
21		1	0	
20	1	1	0	
19	0	0	0	
18	2	2	0	
17	1	2	1	
16	0	1	3	
15	2	3	0	
14	2	1	1	
13	2	1	1	
12	4	5	10	2
11	4	4	7	5
10	4	5	4	2
9	5	8	4	5
8	5	7	4	5
7	5	5	4	6
6	5	3	3	4
5	6	1	3	7
4	0	0	3	9
3	2	1	1	1
2	1		0	4
1			0	1
0			1	

CHAPTER III

ADDITIONAL INSTRUMENTS USED AS PREDICTORS OF TEACHER BEHAVIOR

At the present stage of the development of research in the behavioral sciences, the scientist is rarely justified in building an extensive and costly inquiry on the basis of a single instrument, and particularly on one which has not already been extensively and profitably used as a research device. For this reason a search was made to find other instruments involving different procedures of measurement which might also be used for predicting teacher behavior. The Thematic Apperception Test was immediately suggested but for several reasons was rejected. First, it is based on an approach to the measurement of personality very similar to the one used in the French Test of Insight device. What was sought was a different device which could be used for the measurement of the motive structure of teachers. Second, in the judgment of the writers, the French type of device has had a somewhat better record of prediction than have measures based on the Thematic Apperception pictures. For these reasons a search was made in other directions in order to locate suitable instruments which were based on a different approach.

In addition some effort was also devoted to the development of devices which might measure attributes of the personality of teachers and which offered some hope of providing predictions of classroom behavior. The same policy was pursued in the development of new instruments as was pursued in the search for devices already available. Attempts were made to develop new devices but these were to be devices which attempted to measure need-related categories of behavior. In other words, there was no intent of developing new devices merely because somebody on the research staff had an attractive idea. The idea had to fit the general framework of the study before it was used as a basis for the development of a predictor instrument.

The Stern and Masling Motivation Measure:-- Teacher Preference Schedule, Form G158

A device prepared by George G. Stern and Joseph M. Masling as a part of a previous research contract with the U.S. Office of Education (Contract No. SAE 6459) attracted the attention of the investigators at an early stage in the present study. The Stern and Masling study and the instruments derived from it are unique in that they represent the only other devices that could be found which might be related to classroom behavior and which represents an attempt to measure teacher motives.

The purpose of the Stern and Masling inquiry (1958) was to develop instruments for the measurement of motives related to the career of teaching and to relate these measures to performance in specific areas of the elementary school teaching process. The data on which the scales were developed were derived from a number of different sources. First, sketches of a number of motivational types found among teachers were obtained from interviews with public school administrators, supervisors and teachers. A sample of teachers representing each type was then selected and interviewed in order to obtain further information about the motives operating. The members of the sample were also tested. On the basis of these data, instruments were developed for measuring each of ten motives believed to be operating. The final instrument developed and used in the present study is entitled Teacher Preference Schedule, Form G158 and consists of 100 items. Ten additional achievement and affiliation items were added from the Stern Teacher Preference Schedule, Form A158. The subject must respond by rating each item for the degree of his liking or approval. The motives are described by Stern and Masling in the following words:

1. Practical. These people utilize teaching as a means of achieving pragmatic, utilitarian, tangible goals. Involvement in teaching is limited to the instrumental value the occupation has for such individuals, in terms of hours, pay, vacations, and similar sources of gratification. Since their primary investments are in non-academic activities, the supporting attitudes must necessarily justify detachment.

2. Status-Striving. These are the individuals for whom the ascribed status of the teacher is more important than the teaching function. Whether for socio-economic reasons, family ambitions, or personal identifications, they find considerable gratification in teaching from the prestige it confers on them. The significant attitudes in this case reflect a preoccupation with professional dignity and propriety.

3. Nurturant. These teachers are characterized by a pervasive feeling of affection for children, and a desire to assist and support them. These teachers are warm and loving in their relationships with children, devote themselves freely to their pupils problems, and derive, their greatest satisfactions from the reciprocal affection and gratitude of the children. They justify these activities on the grounds that a child's greatest need is for love.

4. Nondirective. The motive here is to minimize the pupils' expression of dependency on the teacher. These teachers feel rewarded to the extent that their pupils demonstrate capacities for self-direction, and they identify with an ideology which stresses respect for the integrity of the child and justifies the use of pupil-centered techniques in the name of self-actualization.

5. Rebellious. For these teachers, the central theme is a dedication to reform and improvement. These teachers are the organizers and critics of the profession, and find gratification in the opportunities which exist for championing the cause of an underdog. Relevant attitudes involve criticism of contemporary practices in educational administration, and a generally negative view concerning the qualifications and motives of authority figures.

6. Preadult-Fixated. These people prefer the society of children to that of their own agemates, feeling essentially inadequate in the role of an adult. Their greatest pleasure in teaching comes from sanctioned opportunities to participate vicariously, and sometimes directly, in the activities of their pupils. Their attitudes reflect an idealization of childhood and a justification for identifying with pupils.

7. Orderliness. The motive here is to codify and regulate behavior, minimizing the uncertainties inherent in personal interactions. These teachers are characterized by a compulsive preoccupation with rules and procedures, and are most gratified by demonstrations of bureaucratic timing and organization in the classroom and school. They justify this in terms of the need for developing good pupil habits.

8. Dependency. The focus for these teachers is the inverse of the rebel. Their personal insecurities are expressed in the form of a reliance on support from authority figures, and their major gratifications in teaching come from close supervision and guidance. Supporting attitudes justify compliance and cooperation with authority on the grounds that superiors know best.

9. Exhibitionistic. For this group of teachers the motive is oriented toward personal display and attention-seeking. These teachers achieve satisfaction from opportunities to entertain and captivate their pupils. They have a pervasive need to be admired, and rationalize their exhibitionistic activities in the classroom on the grounds that clowning, personality, and showmanship are essential qualities for effective instruction.

10. Dominance. These individuals are concerned with reassurances regarding their own superiority and value. The subordinate status of the pupil is a significant source of gratification for them and they derive considerable pleasure from activities which keep the child in that position to the enhancement of their own. These behaviors are justified in terms of the need to maintain discipline.

Stern and Masling provide substantial information demonstrating that the items within each scale have a high degree of internal consistency. All the data point to the conclusion that the reliabilities of the scales are satisfactory.

Interscale relationships given by Stern and Masling are also satisfactory for our present purposes since they tend to be low and almost certainly less than the reliabilities of the individual scales. Table 3.01 shows the relationship between scores on the ten scales based on administration of the device to 104 freshman college students. The Table is so arranged that it brings out a tendency for certain variables to cluster much in accordance with expectation.

Four additional scales were established on an *a priori* basis which classified the items in terms of the extent to which they were believed to reflect the four needs, achievement, affiliation, recognition, and control, which form the focus of this study. These scales were produced by asking the main staff members to provide independent ratings of the extent to which responses to each item in the instrument reflected each of the four needs. These ratings of the items were used to develop a set of four a priori keys for scoring the device on the four needs. In Chapter V further data will be provided concerning the interrelationship of scores derived from these keys.

In many ways the introduction of the Stern and Masling device represents a departure from that represented by other instruments. The USB, for example, represents an attempt to predict behavior in a specific situation, mainly the classroom, from measures of motives believed to represent permeating and lasting personality structures. While the Stern and Masling device can be considered to be an instrument which measures needs, and the measures thus derived may be studied to determine their value in predicting classroom behavior, a much simpler justification of the use of the device may be stated. The device may be considered to measure the degree to which the teachers approve of certain categories of classroom behavior and the use of the instrument here may be considered as an attempt to determine the extent to which teachers perform in accordance with the ways of behaving which they endorse in a paper and pencil situation.

In many ways the procedure implied in the Stern and Masling device maximizes the possibility of making predictions of teacher behavior. In so far as the test is a measure of need, it introduces cues for need arousal which are probably quite similar to those involved in the classroom and asks what practice they would endorse under these conditions. This provides a very favorable condition for making predictions from the testing device to the teaching situation. However, any relationships found do not provide a firm support for the doctrine that need is a determinant of teacher behavior, unless there are clear relationships between scores derived from such a device and measures of need which are not tied in closely to behavior in classroom situations.

Table 3.01

Intercorrelations Between Scales On the
Stern and Masling Teacher Preference Schedule

	Scale	1	10	7	8	5	2	6	9	3	4
Practical	1										
Dominance	10	.35									
Orderliness	7	.18	.68								
Dependency	8	-.21	-.06	.38							
Rebellious	5	.18	.24	.42	.48						
Status	2	.00	.00	.18	.32	.51					
Pre-adult Fixated	6	.00	-.18	.18	.21	.36	.35				
Exhibitionistic	9	.18	.24	.24	.00	.36	.46	.57			
Nurturant	3	.00	.06	.06	.15	.18	.19	.56	.51		
Nondirective	4	.27	.09	-.03	.23	.38	.15	.32	.32	.38	

Data from Stern and Masling (1958)

The Van Pit Series-Wishes

At a relatively late stage in the inquiry, the attention of the staff was drawn to an instrument known as The Van Pit Series-Wishes. Although no author is indicated on the test booklet, the device is clearly a product or outgrowth of the educational thinking of Louis Raths and his students at New York University and was published in a series of which Louis Raths was the main author. The device consists of blocks of four statements each one of which represents something a person might have wished for when younger. The subject reads the four wishes and then chooses the one which was "best for him," when he was younger. After the subject has marked the items best for him, he then selects the statement in each group that was least important to him when he was younger. The device attempts to measure needs which are described as follows:

Belongingness
Achievement
Economic security
Freedom from Fear
Love and Affection
Freedom from intense feelings of guilt
Self respect and sharing
Meaning and direction in life

Each need scale on the Van Pit contains fourteen items, with the exception of the additional control scale which contains fifteen items. In the scoring procedure used by the authors of the test, each need scale is simply scored 1 or 0 indicating the presence or absence of the need. The criteria for scoring the need as present (e.g., a score of 1) are as follows:

a. If the number of items marked B (best) for a given scale exceeds six, the presence of the need is scored.

b. If the sum of the number of items marked B and L (least) is less than three, the presence of the need is scored.

c. If both the number of items marked B and the number of items marked L exceed four the presence of the need is scored.

Scoring criterion (a) is based upon the assumption that a greater than chance number of items marked B in a scale indicates the presence of the need. If the responses to the items were distributed randomly across all scales, 3.5 B's and 3.5 L's would be expected for each scale. This scoring criterion is reasonably straight-forward, since the items are written so that a high number of B responses would indicate a concern for the need which the scale was designed to measure.

Scoring criterion (b) rests on the assumption that a fewer than chance number of responses to any scale indicates repression of the various manifestations of the need stated in the items.

The third scoring criterion (c) only requires the respondent to have more B and L responses than would be expected due to chance in order to receive a score for the presence of the need. It is assumed that more than a chance number of B and L responses indicates sufficient affective concern for the need to indicate the presence of the need.

In order to obtain a score for a need the response pattern must satisfy only one of these criteria.

The members of the project staff were not able to determine the purpose of the dichotomous scoring procedure which was developed by the authors of the test. It is possible that the procedure was developed to facilitate the interpretation of the scores by individuals inexperienced in psychological measurement. In any case, since all of the other measuring instruments used in the study produced continuous variables, it was decided that an additional scoring procedure would be used for the Van Pit which would provide a continuous scale of scores. In the procedure which was employed, the B responses were added to the L responses for each need scale. The rationale for this score is similar to the rationale for the scoring criterion (c) of the original dichotomous score. It is assumed that the greater number of B and L responses to a scale, the greater the affective concern for the need. The latter score is referred to as score 2 to distinguish it from the score originally provided which is score 1.

No information could be found concerning the reliability or validity of this device, but one cannot doubt that considerable thought had been devoted to its preparation. Since, it was encountered only late in the research it was administered to only 41 of the teachers for whom criterion data were available.

Exploration of the Educational Objectives of Teachers in Relation to Their Need Structure (Objectives Test)

The central hypothesis upon which this entire investigation is based is that the needs of teachers are important determinants of classroom behavior. Under this broad hypothesis one can state more specific and testable hypotheses and one of these is that the need structure will influence the educational goals that the teacher will consciously endorse. The instrument described in this section is an attempt to discover the educational objectives which teachers consciously endorse to provide an indirect measure of the need structure of teachers.

In exploring the various possible devices that might be used for finding out what objectives the teachers would endorse, a first thought was to provide the teachers with a list of objectives and for them to rate each on some scale indicating the importance of each. While such a device represents a direct attack on the problem, the results might well represent only stereotyped responses of a kind which society sanctions. For this reason other approaches to the problem were considered.

An alternative which appeared to offer some promise was that of listing numerous characteristics of adults and asking the teacher to indicate the extent to which she hoped that that characteristic would emerge in the pupils she had taught. Such a list could contain not only characteristics which are generally considered to be desirable but characteristics which represent rather different values. Such a list would not have to be worded in terms of the expressions commonly used in describing educational objectives and hence might not attract stereotyped responses on the part of the teachers to whom it would be administered.

Since the hypothesis was that the teachers would project their own goals and motives onto the pupils, a list of descriptions of adults was prepared which included items reflecting the four needs included in this study. Examples of such items are:

A person who can sacrifice for the welfare of the group
A person who enjoys being dramatic
A person who always looks for a better way
A person whomothers can talk to
One who is always in command of the situation

The teachers were instructed to read each description and to decide the degree to which it represented a desirable educational goal. The following rating scale was used in the rating of each description:

Rating Scale

5. This behavior represents a major goal of education and one of the most important that education can achieve. An education that does not contribute to the achievement of this goal is a failure.

4. This behavior represents one of the more important goals of education. All teachers should attempt to contribute to the achievement of this goal.

3. This behavior represents a goal of education which should be stressed but not to the exclusion of other goals. A goal of moderate significance and one which often cannot be stressed because of the existance of more important goals.

2. This behavior represents a minor goal of education, one to be achieved insofar as this does not interfere with the achievement of other goals.

1. This behavior represents an undesirable goal of education. If it were achieved it would indicate that education had been to some extent a failure.

The device consisted altogether of 80 items divided into four groups of 20 each corresponding to the four needs. The items were arranged in random order. Scoring can be undertaken by two possible procedures. The first is that of summing the ratings given to the items within each group of 20 items. This would provide a score which one might hypothesize to reflect the degree to which the objective was stressed by the teacher. This method of scoring is likely to be influenced by a tendency to mark all outcomes listed as important or to mark all outcomes as unimportant. A second method of scoring could be devised which would correct for the tendency for persons to rate items numerically generally high or generally low. Such a scoring system would amount to providing scores with the first general factor removed. The data to be discussed here first is based on the first of the latter two methods of scoring.

Reliability of raw scores can be estimated through the use of a split-half technique. Split-half reliability coefficients, based on a population of 59 teachers who were graduate students in educational psychology, are shown in Table 3.02.

Table 3.02

Split-Half Reliability of Raw Scores Derived From Personal Preference for Educational Objectives (Based on 59 Graduate Students)

Need Hypothesized to be Reflected by Scale	Split-Half Reliability
Achievement	0.82
Affiliation	0.87
Recognition	0.88
Control	0.85

A matter of considerable interest is the relationship between the scores derived from the different scales. To some extent a correlation between the scales is generated by the tendency to mark all objectives as important or as unimportant. The raw score system tends to produce spuriously high correlations among the scales because it retains the effects of this response set. The correlations between scores derived from the four scales is shown in Table 3.03.

Table 3.03

Correlation Between Raw Scores Derived From the Four Scales of the Personal Preference for Educational Objectives Scores are the Sum of the Ratings for Each Scale. (Data Based on 59 Graduate Students.)

	Achievement	Affiliation	Recognition	Control
Achievement				
Affiliation	.59			
Recognition	.39	.44		
Control	.54	.47	.81	

The correlations in Table 3.03 are sizeable reflecting the existence of a general factor underlying the scores on all scales. This general factor may represent a response set or perhaps a tendency for some teachers to view all the objectives as important while others view them as relatively unimportant.

Procedure Finally Adopted for Reducing the Effect of Certain Response Sets

A procedure which was finally adopted for all scales involved in the study which introduced a similar response set required the adjusting of each set of scores obtained by each individual on the four scales in such a way that the mean of these four scores was the same for all individuals, but the relative magnitude of the scores from scale to scale for each individual was retained. In other words, if the scores are arranged in a data matrix with the j scores for each of i inidividuals, the total of the corrected scores for each individual should be the same and the variance between such totals should have been removed. This can be accomplished by multiplying each raw score X_{ij} by the quotient obtained by dividing the total for the raw scores that are being corrected T_i, by $\bar{T}$ which is defined as $\frac{T_i}{N}$. Each adjusted score is obtained by the following operation:

$$\text{Adjusted Score} = X_{ij} \frac{T_i}{\bar{T}}$$

This system for adjusting scores to eliminate response tendencies to produce high or low scores was used throughout the project. Whenever, in the subsequent report, the term "adjusted score" is used, reference is made to this form of adjustment. Data derived from this instrument based on this third scoring procedure are reported in Chapter 5.

Self Ratings

There is a long history of controversy concerning the relationship between self ratings of motivation and measures of motivation derived from objective sources of information. While personal stand has generally taken the position that an individual is aware of his motives and can describe them, psychologists have generally taken the opinion that motives tend to operate at the unconscious level. The latter position was first emphasized by Sigmund Freud who considered that behavior could be better understood in terms of a system of relatively unconscious motives than in terms of the person's own statement of his motives. Clinical psychologists have generally accepted the position of Freud. It is claimed that the distortion of motives as they are perceived at the conscious level exists because the true motives are in conflict with the superego and hence can appear at the conscious level only in a more acceptable form.

In the case of the present study the motives under consideration are not such that they may be expected to be incompatible with the supergo, except possibly in the case of control need. In the American culture the development and presence of need for achievement, need for affiliation, and need for recognition are compatible with the dominant values of the culture and with those values which are typical of the social group from which teachers are mainly derived. For this reason one might expect that some relationship might be found between motives as measured by projective devices and motives as measured by self ratings. In addition, one might expect to find a relationship between self ratings of motives and behavior in the classroom which might be expected to occur if particular motives were operating. For this reason a self rating device was developed which was designed to provide measures of the four needs. The device is reproduced in Appendix 5 together with a key indicating the needs that were expected to be measured by each item. Need scores were derived by adding together the ratings for the adjectives pertaining to each need. In the case of a few items the scales are reversed in the scoring procedure which is simpler than assigning negative weights to the ratings as given.

This self rating schedule was not administered to all teachers in the sample studied. It was administered to a sample of 41 teachers for which results are reported in later sections of this report.

Test of Reactions to Teaching Situations (Situations Test)

Scientists working on the project who spent time in classrooms were impressed with the fact, as others have been impressed, that teachers facing the same situation show striking individual differences in the responses which they manifest. The suggestion was made to develop measures of teacher performance based on this concept. The idea was to attempt to list classroom situations and then to wait until each such situation arose and then to record the response of the teacher. The responses could then later be scored in terms of particular dimensions. This suggestion appeared to be an elegant new slant on the problem of measuring dimensions of teacher behavior related to learning.

Like many interesting and intriguing ideas, difficulties soon emerged when attempts were made to develop it into a practical technique. Specified situations did not appear with sufficient frequency to make it feasible to wait in classrooms until they appeared and then to record the consequences. While one could, given large amounts of time and money, collect records of the reaction of each one of a number of teachers to each of a set of specified situations, this procedure did not seem feasible within the framework of the present research.

Despite the fact that the research workers were discouraged with the possibility of applying this idea directly to the study of classroom behavior, an alternative and more indirect application of the idea suggested itself. The proposal was made that a list of commonly occurring classroom situations be drawn up and that teachers be asked to indicate what was their typical way of handling these situations. In order to facilitate scoring, the additional suggestion was made that each of the situations described be followed by a list of possible teacher responses which might be rated by teachers in terms of their approval or disapproval of them.

A device along these lines was built. First a series of situations were assembled by the members of the research staff who had had extensive experience in classroom observation. These situations were chosen on the basis that they were commonly occurring and that they led to a range of different responses of the teachers involved. The responses listed after each of the situations included, as far as possible, responses which might be interpreted as reflecting each one of the four needs which were the subject of study. The keying of the responses was undertaken on an a priori basis. Four judges were involved and a high degree of agreement was found among the judgements. Such disagreements as did occur appeared to be a product of the tendency for the judges to project their own needs into the task and hence to provide different interpretations of the responses that were being judged.

The material was then put together in the form of a test which will be referred to here as the Reactions to Teaching Situations Test or as the Situations Test. After each classroom situation a series of possible responses was listed. The person taking the test was required to rate each one of the responses on a scale which varied from strongly approve to strongly disapprove. Scores on four scales representing the four needs were obtained by adding together the ratings for all items related to a need. Since there was a marked tendency for some persons to produce all high scores or all low scores, the scores derived from the ratings were corrected for this response tendency by the method previously described.

In the case of this instrument no systematic tryout of the device could be undertaken prior to the administration of it to the sample of teachers that was to form the focus of the research.

Procedure for Collecting the Predictor Test Data

After the development of the various instruments which have already been described in Chapters 2 and 3, the question was raised concerning the best way to administer the test battery to the teacher sample. After some deliberation, the project staff decided that whatever procedure was used, it should be one which minimized the possibility of arousing anxiety in the teachers. It was agreed that a standard testing procedure which attempted to assemble all of the teachers at one time and in one place for the administration of the test battery would be too great an imposition on the teachers' time and might tend to generate negative attitudes towards the entire research project. For these reasons, a more informal procedure was finally used. The measuring instruments were reproduced, and one copy of each instrument was placed in a large manila envelope for each teacher. These envelopes were referred to by the project staff as "test kits." In addition to the specific directions for taking each test, which are reproduced in the appendices, the kit contained the following statement of general directions:

The kit contains several devices with which we hope to measure individual differences related to styles of teaching. We want to stress that this material will be kept confidential. You need not write your name on any of the answer sheets. Since we are primarily interested in the individual differences among teachers it is very important to our research that you refrain from discussing or comparing your responses with other teachers until after the kits have been collected. After you begin completing these devices you may have some questions concerning specific items or one of the devices. As is often our tendency, your first urge may be to discuss your question with one of the other teachers. If such a situation arises, please do not discuss it with other teachers but instead phone us and we will try to answer any questions you may have.

In completing the materials, we ask you to fill out the Utah Study of Behavior first. We ask this because the Utah Study of Behavior is the longest, and perhaps the most tedious of the devices in the kit. We feel that it's validity will be enhanced if it is completed while you are still "fresh." Also, in filling out the Utah Study of Behavior, as well as the other devices, we wish to emphasize that you should work as rapidly as possible. We are interested in your spontaneous first impressions to the items. Do not try to puzzle out or second guess the items. If anything, such puzzling out will decrease the value of the inventories.

Finally, we want to point out that on the Objectives, Preference Schedule, Reactions to Situations, and Adjective Check List, the ends of the rating scales should not be avoided. People are just as likely to have strong liking or preference or strong dislike as they are to have only moderate feelings concerning the items. We are interested in as good a measure of your preferences as possible, thus if you have strong or moderate preferences, please feel free to state them.

Each teacher was contacted individually by members of the project staff, and appointments were made to meet with the teacher, either at school or at her home. During this meeting the teacher was presented with the test kit and the staff member went through the directions for each test with the teacher so that she would be clear about how to complete the tests. Various aspects of the directions were re-emphasized, and the teachers were urged to ask any questions they might have concerning the tests. Since some teachers became quite anxious in this situation, the project staff member attempted to develop some rapport with the teacher and attempted to ease her mind concerning the testing, and the purposes for which the results would be used. Each test kit was sealed and stamped confidential and care was taken to avoid the use of the word "test," using instead such words as instrument, device, or measure. The teachers were instructed to complete the test kit in their spare time. At the end of the meeting, a tentative time was set when the staff member could pick up the completed test kit.

The cooperation received from the teachers in the collection of the test data was generally very good. Most teachers were very prompt, completing the test kits in a week or ten days. A few teachers, however, took much longer. Six teachers did not complete the test kit, for reasons of health, or because they moved out of the area. Chapter 5 provides additional information concerning the initial contacts with the teachers, and also provides a detailed description of the teacher sample.

The Measurement of Teacher Behavior in the Classroom

Successful prediction of teacher behavior requires that relevant intervening variables be measured which are operating in the classroom situation and that there be available carefully collected data concerning the behavior of the teacher in the classroom. This chapter discusses the techniques used for the collection of classroom data concerning the teachers.

The previous chapter mentions the fact that hopes were expressed early in the study that the responses of teachers to certain well-defined situations might be recorded as the basic data on the classroom behavior of teachers. The reasons why this technique was not adopted have already been discussed. Other techniques of introducing some standardization into the conditions under which classroom data might be recorded were also discussed. One of these was the suggestion that each one of the teachers be asked to teach a particular unit of instruction such as a unit related to developmental reading. The main difficulty in the way of the latter procedure is that a considerable grade range had to be involved in the study in order to obtain a large enough population of teachers and hence there was very limited possibility of arriving at standardization of conditions through this procedure. There is also another limitation to the technique of asking each teacher observed to teach a particular unit which is that specifications for the unit cannot be drawn up in such a way that any degree of standardization is actually achieved. Teachers assigned to different groups of children with different social backgrounds, different levels of ability, and with different school experiences during the previous weeks, cannot be expected to teach a single prescribed unit. Teachers must be free to modify their teaching according to the context in which it is given, otherwise much of it might well be meaningless. For these reasons, the thought of introducing some standardization into the teaching situations to be observed was abandoned. An alternative procedure which might have much the same effect was to plan the collection of classroom data so that a considerable span of time might be covered. In this way the investigators hoped that each teacher would be observed to respond to a similar wide range of situations.

Two general categories of observational procedure may be adopted. In the one, data are collected during the period of observation and are later analyzed at leisure. In such a case, procedures are set up so that a sample of events occurring in the classroom can

CHAPTER IV

THE DEVELOPMENT OF DEVICES FOR MEASURING ASPECTS OF TEACHER BEHAVIOR IN THE CLASSROOM

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Two general categories of observational procedures may be adopted. In the one, data are collected during the period of observation and are later analyzed at leisure. In such a case, procedures are set up so that a sample of events occurring in the classroom can be recorded objectively and reliably. The observer must be allowed no leeway in what to record. In the alternative type of procedure, the observer is engaged in both observation and analysis of data while he is in the classroom. Ratings of teacher behavior and pupil behavior are typically in the latter category. The rater observes events in the classroom but records only his analysis of these events as they are expressed by a rating. All rating procedures involve a combination of both data collection and analysis.

The advantages of collecting data in the classroom and leaving the analysis of the data until a later time are so substantial that the decision was made to place emphasis on this type of procedure. If this is done, many different methods of analysis can be attempted and the data can be clearly distinguished from the products of analysis. For this reason, efforts were made to find a suitable technique for the collection of data concerning teacher behavior. The procedure finally adopted was a modification of Withall's technique (1949). Despite the desirability of obtaining objective data concerning teacher behavior for future analysis, the research workers did not feel entirely justified in discarding traditional rating procedures. The staff of the project agreed that rating procedures, though they do confuse the processes of data collection and analysis, had provided results of sufficient significance in other research that they could not be cast aside.

1. Withall's Technique

a. The Technique. Withall based his technique on the assumption that most of the important transactions in the classroom that are related to learning are verbal transactions, and hence a record of these transactions should be valuable evidence of the processes that are operating. A complete record of the verbal transactions in a classroom could be obtained through the services of a stenographer but such a record would be voluminous, cumbersome to analyze, and provide a superfluity of data. Withall proposes that a time sample of verbal transactions be collected and later analyzed. He also limits the verbal data collected to statements made by the teacher. The latter restriction seems reasonable since in most classrooms the verbal behavior of the teacher is much easier to record than that of the pupil who often talks in a low voice inaudible to an observer.

The members of the staff of the project who were to visit classrooms were generally introduced to the faculty at one of the regular faculty meetings. A broad general account of the project was given but not enough was said to indicate that it involved the assessment of teacher motivation and the prediction of teacher behavior. Assurances were given that none of the data collected would be divulged to the administration of the school system; that all data would be confidential. Only those teachers willing to participate in the study were contacted further. Only five teachers were unwilling to participate.

An initial period of contact with the teacher was required prior to the collection of any data. During this time, classrooms were visited for short periods, but no records were made and neither were any data collected. The purpose of these preliminary visits was to help the teacher and the pupils become accustomed to the presence of the visitor. A greater number of these preliminary visits were made in the case of teachers who seemed disturbed by the presence of the visitor than when confident teachers were encountered. However, the observers had the impression that teachers disturbed by visitors continued to be disturbed even after several preliminary visits.

Each teacher was then visited on at least two occasions by two members of the research staff. At each visit, the observer recorded the first statement made by the teacher during each minute of observation. Most of the verbal behavior of the teacher is public and open for all to hear. A small fraction of it is private as when the teacher works with an individual pupil and converses with the pupil in a low voice. The latter type of private behavior was a rather rare occurrence among the teachers observed. As a rough guess one might estimate that over 95 percent of the verbal behavior of the teachers observed was public, that is to say loud enough for all to hear.

One limitation was set on the recording of the verbal behavior of the teachers. This limitation was that repetitive verbal behavior, as when a teacher reads out a spelling test, would be excluded. The reason for this exclusion is obvious. If the entire sample of a teacher's verbal behavior were to consist of test items read to the pupils, the sample would not be particularly informative concerning the typical behavior of the teacher in the classroom. There seemed to be considerable advantages in excluding highly repetitive teacher behavior. The exclusion, however, means that the sample of verbal behavior shows a slight bias away from those related to the achievement of academic goals. Our impression is that this bias is slight, but it is there.

The samples of verbal behavior were to be recorded on at least two separate visits by two independent observers. The observers were never in the classroom togehter. Each sample was to consist of twenty-five statements.

The time taken to collect twenty-five statements varied from twenty-five minutes up to several hours. Some teachers show much verbal behavior and will emit at least one statement during each minute of observation. Others, show great parsimony in verbal behavior and during a one hour period may make only ten recordable statements. In the cases of the latter teachers, the observers often had to return many times before they were able to obtain a total of two samples of 25 statements. A first impression was that many of these teachers were inhibited in their verbal behavior by the presence of the observer, but after spending some time around the school this impression was dissipated. Some teachers are very silent even when observers are not present.

The statements recorded were to be complete and meaningful utterances, but not necessarily sentences. If a teacher began to make a comment to a pupil but was interrupted before a meaningful utterance was made, then the verbal behavior would not be recorded. Many utterances are not complete sentences but their meanings were quite clear.

The result of this procedure was that 100 statements were collected from each teacher included in the study. In a few cases a single statement was lacking, due generally to a recording error on the part of the observer. In the case of one teacher only 95 statements were available, five having been lost through a clerical error. In the handling of the results an arbitrary rule was established whereby missing statements were replaced by repeating statements assigned at random from those that were recorded. The latter procedure was decided upon since procedures for the processing of data required that complete sets of statements be available.

Some teachers showed considerable anxiety as soon as the observers began to record events, for record making is not an activity that can be hidden. Many teachers asked what was being recorded and the explanation given was that the observers were recording data pertaining to the practices of the teachers. Certainly, no aspect of the study caused more anxiety in the participating teachers than did the record making in the classroom.

Experience with the technique indicated that the recording of statements made by teachers often did not provide enough information for the interpretation of the statements. Some additional data were often necessary. Such additional data were to be recorded at the same time as the statements were recorded and were to be written in parentheses. Thus a large percentage of the statements are followed by comments in parentheses. An example of this is a statement such as "Jimmy, get busy," which could be either a directive statement indicating a goal to be achieved or it could be highly reprimanding, depending on the context. An explanation following this recorded statement might be (reprimanding), or it might be (teacher thinks child is too slow).

The recorded statements were to be classified into a system of categories, but the system used by Withall did not seem to be particularly useful for the purpose of this research. What was needed was a set of categories related to the needs which represented the focus of the study. Thus it seemed reasonable to set up a broad classification of teacher behavior related to the achievement of the pupils, another classification of teacher behaviors related to social relations and interactions, and a third which pertained to the controlling behavior of the teacher. In addition, there seemed to be advantages in grouping together all behaviors that had to do with routine classroom management. There are many behavior of teachers which are necessary in order to perform many of the classroom routines which have to be performed. A teacher has to conduct a roll call, collect milk money, move children from room to room in an orderly manner, ask children to tidy up the room, make announcements of forthcoming events, find the owners of articles picked up in the hall and so forth. The writers considered that these behaviors should be grouped together separately mainly because they did not have too much relevance for the study.

Withall used a total of seven categories and presented evidence to indicate that sets of 50 statements were adequate for obtaining satisfactory reliability. Since the research project obtained for each teacher a total of 100 statements, confidence was felt in the prospect of obtaining a classification system which would have both adequate reliability and also be well related to the requirements of the study. The classification system itself is presented in Table 4.02 which also indicates the categories of achievement, affiliation, control, and management used for deriving four scores. The lack of continuity in the numbering system of the statements reflects the fact that some categories were abandoned either because they were represented by a negligible number of statements or because they were found to overlap with other categories.

Considerable difficulties were encountered in the development of a system for the classification of statements. A first attempt to provide a crude classification system resulted in approximately 75 percent agreement between classifiers. However, the research staff believed that data of considerable value were being lost by this process and a number of new categories were added, some of which resulted from the splitting of categories previously used. The new procedure required that finer discriminations be made by the classifiers and this, in turn, resulted in a decline in the agreement reached when the statements were independently categorized. The decline in agreement was marked, having fallen to 60 percent when blocks of 100 items were used.

The next step was to clarify the system of classification by establishing a system of rules which would reduce the amount of judgement involved. A new set of rules was evolved which made extensive use of examples in those categories which had proven troublesome. A further tryout resulted in the establishment of some additional rules of classification. A final tryout of the system on a group of 95 statements produced the degree of agreement shown in Table 4.01. The rules for the classification of statements finally adopted is presented in Appendix 7.

Table 4.01

Agreement Among Classifiers Using the Final Classification System on Ninety-Five Statements

Comparisons Tested	Percentage of Items on Which Agreement at the Level Indicated was reached.
One classifier compared with one classifier.	70
Classification based on two classifiers compared with that based on another two.	77
Three out of four agreeing on the classification of each item, the judgements being made independently.	77
Two out of three agreeing on the classification of each item, the judgements being made independently.	94

A classification system in which there is nearly perfect agreement among the classifiers is unlikely to be developed. Failure to reach agreement stems from two sources. First, there is ambiguity in the classification system which the staff worked hard to eliminate. Improvements in the classification system are largely those which involve the removal of such ambiguities. Second, there is ambiguity in the items themselves. Some items can be classified in two or more ways because the statement made by the teacher is not clear. Often one cannot say with any certainty that one of the ways of classifying an item is better than another and no means generally exist for removing the ambiguity. Sometimes the classifier may consult the person who observed the classroom event and recorded it and obtain information concerning the interpretation which it should be given. The latter was not always possible since the observer had often forgotten the context in which the observation was made. Despite such help as can be given by an observer, item ambiguity places a serious limitation on the agreement among raters that can be achieved.

After the trial run had been completed, the research staff agreed to a procedure for the classification of the entire group of statements. The proposal was that each statement be classified independently by three different persons. The majority judgement of the three was to be adopted as the final classification. In those cases where at least two out of three did not agree, then the item was to be discarded. A further check on the classification showed that in 94 percent of the statements there was an agreement of 2 out of 3 classifiers.

Table 4.02

System for Classifying Teacher Statements

Informing (academic)

Achievement	1.1	Emits information, or answers question (not including the repeating of information for reinforcement)
Achievement	1.2	Demonstrates (not including "Look," "Listen," "Watch," etc.)
Achievement	1.3	Provides cues and suggests sources of information
Achievement	1.4	Corrects (takes precedence over other categories)
Achievement	1.5	Asks question to arouse response (excluding rhetorical questions)
Achievement	1.6	Reinforces
Affiliation	1.7	Relates personal experience
Achievement	1.8	Doubtful reinforcers

Controlling

Control	2.1	Reprimands or implies reprimand (takes precedence over some other categories)
Control	2.4	Exercises control to gain recognition (sit up, pay attention)
Control	2.5	Asks class or pupil to be quiet (include reprimands of this type)

Setting of goals and standards and initiating activities (excludes games, recreations and class management)

Negative Control	3.1	Asks pupil or pupils what they want to do or permits choice
Control	3.4	Directs pupils or pupil to achieve goal or perform task (includes starting and stopping, opening books, talk louder, etc.)
Achievement	3.5	Activities related to grading, evaluating, and checking up.

Management

Management	4.1	Perform routine class management functions (roll call, milk money, change of rooms, passes out paper, etc.)
Negative Control	4.2	Delegates management function to pupil (pass out paper, be chairman of discussion, close door)
Negative Achievement	4.3	Organizes games, recreation, rest periods (non-academic)
Achievement	4.4	Reads (literary rather than informative)
Management	4.5	Seeks information (where did we stop, whose turn is it, what page were we on, whose biethday is it, etc.)
Management	4.6	Emits administrative information (includes "we haven't studied that," etc.)

Table 4.02 (continued)

Affiliation

Affiliation	5.1	Expresses affection
Affiliation	5.2	Expresses need for good social relations (includes reprimands)
Affiliation	5.4	Suggests one child help another
Affiliation	5.5	Small talk and nonacademic responses

b. Scores Derived from the Statements. Scores were derived from the statements recorded for each teacher. These were derived by adding together the number of statement classified in each of the categories that were to be combined to form a particular score. The attempt was made to derive scores indicative of the manifestation of achievement need, affiliation need, control need, and also a score indicative of the amount of verbal behavior related to management functions. The procedure was such that a category which entered into one score did not enter into another score. In this sense there was no overlap in the entries combined to form the different scores. Some entries were weighted negatively when combining them into particular scores. The classification of the categories for producing scores is shown in Table 4.02

The system for deriving scores was obtained by asking each one of the four chief members of the project staff to judge the extent to which each category might reflect achievement, affiliation, and control need. Disagreements were settled by discussion, though such disagreements were rather few. The experience of working together during two years resulted in a high degree of agreement concerning the meaning to be attached to the particular measures that the procedure sought to derive.

The method of deriving the scores tends to produce a negative correlation between them. This is because any concentration of the items of teacher behavior in one of the categories raises the score on that category but is likely to lower the score on other categories. This is a product of the fact that scores must be derived from the same total number of items. The disadvantage to this procedure is that variables which may in fact be positively correlated if measured under other conditions may appear in the derived scores to be negatively correlated.

The scores derived from the Withall technique are also of interest from another point of view. The distributions of the four scores for 77 teachers are shown in Table 4.03. Great individual differences are shown among teachers on the scores derived. Control and management scores vary over a 40-point range. The Teacher Statement Achievement scores vary over a 60-point range. Some teacher devote as little as 12 percent of their verbal behavior to goals related to achievement and some devote nearly 50 percent of their verbal behavior to controlling the children. One wonders why some teachers devote less than 10 percent of their classroom verbal behavior to matters of management while other teachers find it necessary to devote nearly 50 percent of their verbal behavior to this management category. Clearly, teachers utilize their time in very different ways and their plan of utilization must surely be related to what is accomplished.

Table 4.03

Frequency of Scores on Teacher Statements

Achievement		Affiliation		Control		Management	
Score	Frequency	Score	Frequency	Score	Frequency	Score	Frequency
64-67	1	13	1	43-44	3	46-48	1
60-63	0	12	0	41-42	0	43-45	0
56-59	3	11	0	39-40	0	40-42	1
52-55	4	10	1	37-38	2	37-39	2
48-51	8	9	0	35-36	3	34-36	3
44-47	10	8	1	33-34	0	31-33	4
40-43	11	7	1	31-32	10	28-30	1
36-39	11	6	1	29-30	5	25-27	13
32-35	7	5	4	27-28	4	22-24	11
28-31	7	4	9	25-26	8	19-21	11
24-27	4	3	8	23-24	11	16-18	17
20-23	6	2	14	21-22	2	13-15	6
16-19	3	1	18	19-20	5	10-12	5
12-15	2	0	19	17-18	8	7- 9	2
				15-16	6		
				13-14	4		
				11-12	2		
				9-10	4		

2. Rating Procedures

The original intention of the research workers was to avoid any kind of rating procedure in collecting data concerning the characteristics of the behavior of the teachers in the classroom. At the best, the process of rating is a vague and indefinite one. It involves the observation of numerous events in the classroom and the processing of these events through a judgmental process. There is no way at the present time of specifying what is to be the nature of this judgmental process for it is almost impossible to lay down specific rules through which the numberous and varied events observed can be quantified and combined to arrive at a specific rating. Whatever comes out of ratings of a positive nature is mainly a result of the extraordinary but ill-understood capacity of the brain to assimilate and integrate large quantities of information. Despite all of the recognized limitations of ratings, the decision was made to rate teachers on a series of scales which might summarize some of the information gleaned in the observation process.

a. Development of a Rating Scale. Studies of teacher traits during the last decade have generally proceeded along two lines. First, there are those which have been concerned with the identification of the dimensions of teacher behavior that can be postulated to be related to the rate of learning in the classroom. Second, there are those who have been concerned with the assessment of such teacher characteristics and the establishment of a structure into which these characteristics may fall. Let us consider briefly these two activities.

The determination of the teacher characteristics that play an important part in the learning process should be developed on the basis of a theory of learning which has been well established by empirical means as appropriate for planning classroom learning situations. Such a comprehensive theory of learning does not exist at the present time though partial and incomplete theoretical formulations offer much promise. In the absence of a complete theory, the tendency has been to rely upon judgment in the drawing up of a list of characteristics of teacher behavior which appear to be relevant for classroom learning. This can be done in many ways, some of which are more systematic than others. However, systematic the approach may be, the results can be of only limited value since they lack the foundation of well-developed scientific knowledge which the task really requires.

One systematic approach to the development of a list of teacher characteristics is that provided by the critical incidents technique which was origianlly developed by Flanagan (1954). In this technique, "experts" are asked to recall and record incidents which clearly differentiate the extremes of teaching. From a list of such critical incidents or critical behaviors one can derive a list of personal characteristics of teachers which are implied by the experts to be important characteristics related to the learning process. A study of critical incidents believed to be related to effective teaching was undertaken by Jensen (1951). The Jensen study has been used as a basis for further research on teacher characteristics but in evaluating such studies the thought must be kept in mind that the value of the incidents is no greater than the worth of the judgment of those involved in the selection of the incidents.

The critical incidents studies which have been considered have done much to help scientists develop lists of traits for use in research on classroom learning. The first task in developing a rating scale was to prepare a list of characteristics which had been used in previous studies and then to cut out apparent overlaps in the characteristics listed. Sources of well worked over lists of teacher traits included the list already mentioned which was prepared by Ryans (1960), that prepared by Medley et al. (1955) on which their instrument known as OSCAR is based, a set of scales prepared by Symonds (personal communication) which was based on very extensive classroom observation, and a system for classifying teacher behavior developed by Hughes (1959). Through the elimination of those traits that appeared to overlap and by discarding some that had little relevance for the research project, a set of 31 traits remained which were later used in all rating procedures. The rating sheet is reproduced in Table 4.04. To this list was added four rating scales which were used to rate teachers for the extent to which they manifested behavior related to each of the four needs. The rating scales related to the four needs are reproduced in Appendix 6.

Table 4.04

RATING SCALES

Teacher observer________________ Observer__________ Date__________

1.	aloof	1 2 3 4 5 6 7 N	Responsive
2.	Harsh	1 2 3 4 5 6 7 N	Kindly
3.	Dull	1 2 3 4 5 6 7 N	Stimulating
4.	Stereotyped	1 2 3 4 5 6 7 N	Original
5.	Excitable	1 2 3 4 5 6 7 N	Apathetic
6.	Uncertain	1 2 3 4 5 6 7 N	Confident
7.	Disorganized	1 2 3 4 5 6 7 N	Systematic
8.	Inflexible	1 2 3 4 5 6 7 N	Adaptable
9.	Friendly to students	1 2 3 4 5 6 7 N	Disinterested
10.	Much direct control	1 2 3 4 5 6 7	Little direct control
11.	Emphasized learning	1 2 3 4 5 6 7 N	Relaxed re: learning
12.	Overdramatic	1 2 3 4 5 6 7 N	Shy
13.	Jokes, laughs	1 2 3 4 5 6 7 N	Serious
14.	Criticizes openly	1 2 3 4 5 6 7 N	Does not criticize openly
15.	Room attractive	1 2 3 4 5 6 7 N	Room unattractive
16.	Praises often	1 2 3 4 5 6 7 N	No praise
17.	Frequently punishes	1 2 3 4 5 6 7 N	No punishment
18.	Much emotional evidence of frustration	1 2 3 4 5 6 7 N	Little emotional evidence of frustration
19.	Very vigorous	1 2 3 4 5 6 7 N	Listless, quiet
20.	High standards	1 2 3 4 5 6 7 N	Low standards
21.	Gives much encouragement	1 2 3 4 5 6 7 N	Gives little encouragement
22.	Much individualization	1 2 3 4 5 6 7 N	Little individualization
23.	Functions often as source of knowledge	1 2 3 4 5 6 7 N	Functions seldom as source of knowledge
24.	Delegates much authority	1 2 3 4 5 6 7 N	Delegates little authority
25.	Much grouping	1 2 3 4 5 6 7 N	Little grouping
26.	Spends much time working alone	1 2 3 4 5 6 7 N	Spends little time working alone
27.	Very negativistic	1 2 3 4 5 6 7 N	Generally positive
28.	Permits great variety of activities, noise, etc.	1 2 3 4 5 6 7 N	Activities very orderly
29.	Much physical contact	1 2 3 4 5 6 7 N	Little physical contact
30.	Much discussion of personal feelings	1 2 3 4 5 6 7 N	Little discussion of personal feelings
31.	Very verbal	1 2 3 4 5 6 7 N	Little verbal behavior

N = Not Observed

All ratings were performed on a seven point scale considered to represent the range of the trait as manifested by teachers in the classroom. Despite the intention of the designers of the rating scale to use the entire 7-point range of the scale, the raters showed a considerable tendency to bunch their ratings on a particular trait to one or the other end of the scale. Despite this restriction in range of the rating scales, considerable agreement was found between raters. Information concerning the reliability of the rating scales is given in Chapter 5.

All ratings were undertaken as a last step in the observation process. At the time when each teacher was rated by each one of the two observers, the teacher had been observed for a period of at least two hours and observation had been undertaken during at least three separate visits to the classroom. In the case of some teachers the rating was undertaken after a much longer period of observation depending on the time required to collect other classroom data. Some of the raters believed that they could rate the teacher most adequately at the time when they were in her classroom. Others considered that there were advantages in making ratings after leaving the classroom so that the impressions left by immediate incidents would not unduly influence specific ratings. The latter considered that by withdrawing from the classroom a broader overview of the total pattern of teacher behavior could be obtained. This presents an interesting research problem, but whatever the merits of the two methods may be, one fact is certain about the entire ratings. This fact is that all raters felt very insecure about the procedure, and throughout had doubts concerning the worth of the assessments that were thus being produced. Any misgivings that the raters may have had about the process, before they began, were thoroughly reinforced by the process itself. The greater the number of taings that were completed, the more doubts were raised about the worth of the process. However, the rating data collected were later demonstrated to have properties which justified optimism rather than pessimism.

After 83 teachers had been separately and independently rated by two observers, an attempt was made to work out a Q-sort for the group with respect to each of the traits on which these teachers had been individually rated. The raters believed that this procedure would overcome some of the difficulties encountered in the attempt to rate each teacher on a number of traits. The difficulties which the Q-sort procedure offered promise of overcoming were as follows:

(1) The procedure would permit the systematic comparison of each teacher with every other. In the rating procedure, the difficulty was encountered of establishing in the mind of the rater some kind of subjective norm which could be used in the interpretation of the scale positions. For this latter reason ratings often tended to be bunched at one end of the scale rather than being distributed over it.

(2) The procedure would permit the considering of all teachers with respect to one trait at one time. This is in contrast to visiting a classroom and rating the teacher on a large number of different traits.

(3) The Q-sort would be based on the combined observations of the two raters. This was considered to be important since in many cases a single rater seems to have obtained a rather biased sample of the behavior of a particular teacher. Combining the samples would help to eliminate such bias.

(4) The raters agreed that some clarification was needed concerning the meaning to be ascribed to particular rating scales and this could be clarified through a discussion of particular teachers. In addition, some of the categories for which ratings were provided were found to represent continua on which teachers showed only a very narrow range of differences.

With these advantages in mind, a deck of cards was prepared with one card for each teacher. Photographs were taken of all of the teachers who would consent and the pictures were pasted on the cards. The purpose of this was to provide a good reminder for the raters of each teacher. During the course of the Q-sort the scientists involved found that the pictures were extremely valuable for reviving memories about each teacher. Indeed, without the pictures the task of performing the Q-sort might have proved to be extremely difficult.

Each trait was then discussed with respect to particular teachers before an attempt was made to sort the entire batch of cards into the prescribed categories. Altogether 82 teachers were involved in the Q-sort of the first batch of data collected, one having been dropped through a clerical error.

The Q-sort was performed on fewer traits than were included in the original rating scale. Some scales were eliminated because the characteristic involved was agreed to be unratable in the case of teachers in classrooms. In other cases, elimination of a trait occurred because the scientists could not agree on the nature of the characteristic that was being rated. This shortening of the list of traits led to a final set of 24 Q-sorts which are listed in Table 4.05. The descriptive comments indicate the agreed meaning of the trait as it was used in the actual Q-sort operations.

The sort was conducted to provide the following frequency distribution over seven categories*:

	Pile 1	Pile 2	Pile 3	Pile 4	Pile 5	Pile 6	Pile 7
Number of Cases	6	10	15	20	15	10	6

Table 4.05

Traits on which the Q-sort was performed for 82 teachers.

1. Aloof - Responsive	This characteristic pertains to the responsiveness of the teacher to the children.
2. Harsh - Kindly	
3. Dull - Stimulating	This refers to the extent the teacher was stimulating to the children judged by O's.
4. Excitable - Controlled	
5. Uncertain - Confident	Did the teacher appear to know what she was doing and how each situation that arose was to be handled.
6. Disorganized - Systematic	At one end of the scale are found classrooms that are chaotic, and at the other end are classrooms that are very orderly.
7. Inflexable - Adaptable	This scale contrasts teachers who pursue a procedure to the end even when it has obviously become inappropriate with the teacher who modified her procedure as the occasion requires.
8. Friendly - Hostile	The essence of this scale is whether the pupils perceive the teacher as a friendly or a hostile figure, as judged by O's. Some teachers may make quite hostile statements but the children do not appear to interpret them as such.
9. Much direct control - Little direct control	
10. Emphasized learning - Lack of concern for learning	This is not to be interpreted as a formal classroom versus an informal one. Nevertheless, it does pertain to the extent to which intellectual learning is or is not emphasized.

11. Jokes, laughs - Serious	
12. Frequently punishes - Gives support	
13. Much emotional evidence of frustration-Little evidence of emotional frustration	In this trait it is particularly important to emphasize that emotional frustration in the classroom is rated. Some teachers who have severe emotional frustrations outside of the classroom may show relatively little in the teaching situation which may even become an escape from their frustrations.
14. Vigorous - Quiet	
15. Functions often as a source of knowledge - Functions seldom as a source of knowledge	
16. Delegates much authority - Delegates little authority	This reflects differences in the amount of decision making permitted the pupil, the extent to which committees are assigned functions, the tendency for the teacher to ask pupils to take over the class etc.
17. Spends much time working alone - Spends little time working alone	
18. Negativistic - Positive	The negative teacher is rejecting of pupil ideas and suggestions and school situations in general, the positive teacher reacts favorable to school, pupil, suggestions, etc.
19. Permits great variety of activities, noise, etc. - Activities very orderly	This is the permissiveness dimension frequently discussed in educational literature.
20. Very verbal - Little verbal behavior	This is simply the amount that the teacher talks.
21. Low achievement motivation - High achievement motivation	

22. Low affiliation motivation - High affiliation motivation

23. Low recognition motivation - High recognition motivation

24. Neuroticism - High ego strength

The procedure was as follows: As each card was turned, each sorter independently assigned it a numerical value corresponding to one of the seven piles. If there was disagreement, the final placement was decided after discussion. The sorters were impressed with a rather high degree of agreement though actual statistics were not obtained. Following this process, cards were shuffled up or down in the sequence of piles, by mutual agreement, until the correct number was obtained in each pile.

In performing these Q-sorts, the research workers were concerned only with behavior of the teachers within the classroom. This is a point to be emphasized since in some cases there were striking differences between the behavior of the teacher in the classroom and behavior in other situations in which these teachers could be observed. In addition, an attempt was made to consider the behavior of the teacher in relation to that of the child. If, for example, the degree of hostility of the teacher were to be judged then the judgment was made whether the pupils reacted as though the teacher were hostile. This problem was well illustrated in the case of one teacher whose remarks might well have been interpreted by a casual observer as hostile but which the children obviously did not interpret in this way. This latter factor introduced an interpretive element into the Q-sort situation which is likely to lower the reliability of the procedure, but it seemed to be one of sufficient importance that it could not be overlooked. Despite these disadvantages, an attempt was made to perform the Q-sorts in terms of the traits as pupils are likely to perceive them operating in so far as this was appropriate.

b. Factor Analysis of the Q-Sort Data. The data derived from the Q-sort procedure is voluminous in that it produced 24 scores for each teacher although one may well suppose that far fewer strong variables are actually involved. In order to reduce the 24 measured variables to a more parsimonious number the staff of the project considered the undertaking of a factor analysis and to use factor scores in later prediction studies.

Studies of the structure of the traits of teachers in a classroom situation have been undertaken typically in a college setting. In these studies the teachers are college teachers and the raters are the students in classes. Thus the raters are typically persons who have had little, if any, psychological training, and hence the studies have to utilize nontechnical concepts of human behavior which are incorporated into the rating scales. Studies by Coffman (1954), French (1957), Gibb (1955), Creager (1950), and Smalzried and Remmers (1943), fall into this category. The results hardly seem generalizeable outside of the field of college teaching for the only real similarity between the job of the college teacher and that of, say, the elementary school teacher is that both involve a learner. A job analysis of the two occupations would surely reveal little overlap between the two jobs. Certainly whatever qualifies a person for the one job would not necessarily qualify him for the other. Ryans (1960) has made an attempt to compare the results of these factor analyses with those made at other levels, and even though he finds a similarity in the factors that are found, a comparison of the different groups hardly seems to be a reasonable one.

The only major factor analytic study of the classroom characteristics of public school teachers which could be located at the time of writing is that undertaken by Ryans (1960) as a part of a long term study of teaching sponsored by the Grant Foundation. This study constitutes one of the most impressive studies of teaching conducted at any level up to this time. It also has special relevance for the research reported here since it was concerned with teaching at both the elementary and secondary level. Compared with many studies of teaching it reflects a high level of sophistication both in its underlying understanding of educational problems and also in its utilization of scientific techniques.

In the Ryans study, an observation schedule was prepared utilizing the critical incidents technique and other sources of information. The blank called for the rating of teachers with respect to 18 characteristics and the rating of pupil behavior with respect to four characteristics. The observers were given training and also a practice session at which a group of teachers were rated and the results of different observers compared. The rating sheet itself consisted of adjectival descriptions of the extreme ends of the scales and a 7-point scale on which the rating was actually made. The observers could avoid rating on a particular trait concerning which they had no observations. Each class was visited by two observers on different occasions and at different times of the day. When less than a certain degree of agreement was reached between the two raters an additional observation period was scheduled with a different observer. The length of the observation time was a "class period." Some drift in the rating practices of observers was apparent as the time increased between the training session and the time when the classroom observations were made. Altogether 275 teachers were observed in the third and fourth grades. At the secondary school level, observations were conducted on 115 men and 134 women who were teaching mathematics, science, English and social studies.

A centroid factor analysis was undertaken by Ryans of the ratings made at each level. Rotation was then undertaken to arrive at a matrix of oblique axes. In the case of the elementary school teacher population, the first three factors showed little intercorrelation but Factors I and IV, and V were fairly highly correlated. A somewhat similar pattern was found in the case of the six factors extracted for the population of secondary school teachers in which the first three factors showed a high degree of independence.

An inspection of the two factor matrices suggested to Ryans that three major patterns of behavior appeared in both. These three patterns were identified as follows:

Pattern X_o -- Reflects understanding, friendliness and responsiveness vs. aloofness and egocentricism.
Pattern Y_o -- Reflects being responsible, businesslike, and systematic vs. being evading, unplanned, slipshod.
Pattern Z_o -- Reflects being stimulating, imaginative, and original vs. being dull and tied to routine.

The project staff in planning a factor analysis of the project data were interested in comparing the factor structure found with the above factor structure. A factor analysis of the project data was also undertaken with the object of deriving a parsimonious system of scores.

The Q-sort data were prepared for machine computation and transmitted to an IBM 704 computer which was used to calculate a matrix of product-moment correlation coefficients and also a centroid factor analysis. The product-moment correlation coefficients are shown in Table 4.06. The reader may note that the table shows great variation in the magnitudes of the correlation coefficients. The writers believe that this aspect of the matrix is to some extent a reflection of the care with which the data were collected and the fact that the procedure was designed to eliminate ratings based on quick overall impressions.

In the centroid factor analysis procedure, unity is placed in the diagonals and then, by an iterative process, proper values for the communalities are more and more closely approximated. The number of iterations required to reach a desirable level of stability of the communalities is a matter of judgment. Since the machine time per iteration is brief once the product-moment matrix has been fed into the machine, the control card was punched calling for five iterations, a number which turned out to be much greater than was necessary.

The unrotated factor loadings are presented in Table 4.07. Clearly, the point set for stopping the factor analysis makes much too liberal an evaluation of the worth of the residuals which remain after the fifth factor is extracted, but all that this has done is to waste a few minutes of machine time.

The next step involved a rotation procedure which, also, can be done on a computer. Since several procedures are available, one had to be selected. The procedure adopted was that known as the Varimax procedure developed by Kaiser (1958). This procedure seems to provide a solution which approximates closely to the simple-structure criterion developed by the late L. L. Thurstone. Kaiser also claims that the criterion of factorial invariance is also reasonably well satisfied. The rotational solution adopted provides a system of orthogonal factors. The varimax solution according to Kaiser can be adapted to provide a system of oblique factors but for the purposes of the study an orthogonal solution seemed to be the most satisfactory. The rotation was run on the computer at the University of Illinois with the help of Dr. Kaiser whose assistance is gratefully acknowledged. The rotated factor matrix for the first six factors is given in Table 4.08. While the rotation was carried out with the complete matrix of 15 x 15 factor loadings, the rotated factor loadings beyond the fifth factor are small, inconsequential, and do not demonstrate a sufficient pattern to be of any value.

Table 4.[illegible]

Matrix of Correlation Coefficients Derived from the Q-Sort Data (Variables Described in Table 4.06)

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.303	-.608	.601	.610	-.013	.064	-.566	.276	.712	-.656	.060	-.141	.787	-.106	.508
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.106	-.669	.732	.675	.076	.033	-.571	.302	.761	-.637	.106	-.109	.817	-.194	.585
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.390	-.651	.038	.386	-.697	-.373	-.339	.066	.711	-.257	-.450	.443	.396	.335	.417
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.372	-.060	.679	.355	.628	.358	-.369	.032	.239	-.303	.683	-.440	.330	-.537	.364
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.389	-.483	.317	.662	-.312	-.326	-.307	.016	.716	-.206	-.073	.257	.417	.161	.697
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.366	-.315	-.064	.286	-.257	-.436	.136	-.119	.280	.289	-.167	.434	-.032	.366	.286
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.110	-.648	.670	.566	-.032	.032	-.263	.126	.702	-.775	.110	-.133	.752	-.183	.546
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.023	.736	-.615	-.578	.060	.018	.396	-.286	-.702	.633	-.009	-.009	-.839	.055	-.355
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.650	-.383	.676	.369	.303	.460	-.739	.106	.321	-.766	.385	-.434	.528	-.460	.234
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.999	.101	.361	.023	.440	.633	-.060	.289	-.188	-.335	.353	-.786	.101	-.399	-.018
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.101	.999	-.399	-.413	.339	.180	.578	-.128	-.763	.550	.110	-.133	-.679	-.193	-.505
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.361	-.399	.999	.693	.330	.275	-.619	.318	.509	-.662	.456	-.330	.615	-.509	.532
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.023	-.413	.693	.999	.105	.083	-.440	.128	.661	-.417	.236	-.101	.569	-.239	.757
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.440	.339	.330	.101	.999	.516	-.092	-.101	-.312	-.061	.670	-.366	-.032	-.662	-.179
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.633	.180	.275	.083	.516	.999	-.110	-.078	-.298	-.188	.578	-.592	-.037	-.667	-.119
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.060	.578	-.619	-.440	-.092	-.110	.999	.061	-.387	.786	-.266	.066	-.573	.252	-.317
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.289	-.128	.138	.128	-.101	-.078	.061	.999	.136	-.220	-.317	-.133	.369	.101	.236
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.188	-.763	.509	.661	-.312	-.298	-.387	.136	.999	-.550	-.069	.220	.711	.133	.670
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.335	.550	-.662	-.417	-.061	-.188	.786	-.220	-.550	.999	-.188	.363	-.711	.239	-.372
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.353	.110	.456	.236	.670	.578	-.266	-.317	-.069	-.188	.999	-.459	-.018	-.688	.009
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.786	-.133	-.330	-.101	-.366	-.592	.066	-.133	.220	.363	-.459	.999	-.092	.337	-.023
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.101	-.679	.615	.569	-.032	-.037	-.573	.369	.711	-.711	-.018	-.092	.999	-.078	.366
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.399	-.193	-.509	-.239	-.662	-.667	.257	.101	.133	.239	-.688	.537	-.078	.999	-.041
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.018	-.505	.532	.757	-.179	-.119	-.317	.236	.670	-.372	.009	-.023	.366	-.041	.999

Table 4.07

Factor Loadings - Teacher Motivation Study - 5th Iteration - Centroid Analysis

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	.80	-.35	.20	-.23	-.06	.05	-.10	-.13	-.06	.13	.05	-.08	.03	-.06	-.06	1. Aloof - Responsive
2	.86	-.39	-.05	-.16	-.21	-.08	-.13	-.11	-.05	-.05	-.06	-.07	.10	.01	-.06	2. Harsh - Kindly
3	.29	-.85	.10	.17	.30	.10	.13	-.16	.06	-.05	.03	-.02	.10	.02	.08	3. Dull - Stimulating
4	.63	.39	-.44	-.13	-.03	.21	.17	-.05	-.02	-.06	-.07	-.01	-.06	-.10	.01	4. Excitable - Controlled
5	.60	-.37	-.40	.63	.36	.02	.08	.06	.06	.08	.17	-.10	-.08	-.05	.04	5. Uncertain - Confident
6	-.17	-.66	-.35	-.62	.13	.11	.06	.08	.10	-.06	-.13	.08	.06	-.07	-.06	6. Disorganized - Systematic
7	.85	-.30	.53	.30	-.07	-.07	-.03	-.16	.17	-.07	.03	.03	-.03	-.06	.06	7. Inflexible - Adaptable
8	-.76	.45	-.06	.06	.13	-.10	.18	-.16	.06	.10	.06	.10	.06	-.11	-.06	8. Friendly - Hostile
9	.78	.35	.36	.27	-.08	-.08	.12	.05	.10	.10	-.05	-.08	-.06	-.07	-.13	9. Much direct control - Little direct control
10	.60	.45	.37	-.36	.28	-.06	.12	-.13	-.13	.06	-.08	-.03	-.08	.07	.07	10. Emphasized learning - Lack of concern for learning
11	-.58	.37	-.19	-.16	-.09	-.13	.08	-.07	-.03	.13	.08	.06	-.03	-.06	.05	11. Jokes, laughs - Serious
12	.85	.50	-.33	.06	-.15	-.12	.05	.05	.03	-.09	-.09	-.02	.08	-.05	.01	12. Frequently punishes - Gives support
13	.77	-.45	-.48	-.30	.16	-.16	-.03	.08	.08	.16	-.06	.02	.06	-.04	-.03	13. Much emotional evidence of frustration - Little evidence of emotional frustration
14	.25	.35	-.26	-.13	-.25	.32	-.06	-.06	.12	.08	-.08	.13	-.12	.09	-.03	14. Vigorous - Quiet
15	.30	.38	.30	.03	.24	-.09	-.26	.13	-.10	.13	-.08	-.00	.06	-.07	.03	15. Functions often as a source of knowledge - Functions seldom as a source of knowledge
16	-.73	.53	-.21	-.46	.17	-.11	-.15	-.08	-.08	-.13	.06	-.06	-.06	-.09	-.09	16. Delegates much authority - Delegates little authority
17	.55	-.36	.23	-.23	-.10	-.33	.18	.07	-.18	-.08	-.05	-.07	-.06	.10	-.07	17. Spends much time working alone - Spends little time working alone
18	.63	-.60	-.17	.13	.07	.06	.07	-.11	-.13	.06	.03	.02	.08	.07	-.10	18. Negativistic - Positive
19	-.80	.08	-.26	-.31	.15	.07	-.16	-.03	.08	-.03	.06	-.19	.05	.07	-.06	19. Permits great variety of activities, noise, etc. - Activities very orderly
20	.38	.63	-.37	.30	.08	.16	-.10	-.06	-.10	-.07	-.11	.06	-.09	-.06	.03	20. Very verbal - Little verbal behavior
21	-.38	-.67	-.17	.21	-.13	.06	-.03	.11	-.12	.09	-.07	-.07	.05	-.03	.06	21. Low achievement motivation - High achievement motivation
22	.78	-.38	.13	-.17	-.30	.08	-.07	.08	-.06	-.07	.07	.12	-.06	-.09	-.06	22. Low affiliation motivation - High affiliation motivation
23	-.63	-.68	.31	-.15	.13	.17	.20	-.03	.06	.03	-.16	-.07	-.06	-.06	-.05	23. Low recognition motivation - High recognition motivation
24	.85	-.45	-.33	-.13	.25	-.26	.08	.11	.06	-.09	.06	-.03	-.12	.03	-.02	24. Neuroticism - High ego strength

Table 4.08

Rotated Factor Matrix, Varimax Solution, Q-Sort Data

	Factors						
VARIABLES	I	II	III	IV	V	VI	
1	.81	.60	-.25	-.10	.14	.05	1. Aloof - Responsive
2	.85	.18	-.25	-.22	-.02	-.04	2. Harsh - Kindly
3	.44	-.63	-.30	.13	-.26	.14	3. Dull - Stimulating
4	.26	.77	-.33	-.06	.16	.16	4. Excitable - Controlled
5	.35	-.16	-.73	.08	-.21	.06	5. Uncertain - Confident
6	-.13	-.08	-.49	.08	-.52	.20	6. Disorganized - Systematic
7	.88	.01	-.21	.10	.11	-.09	7. Inflexible - Adaptable
8	-.84	-.08	.22	.18	.07	-.02	8. Friendly - Hostile
9	.46	.37	.06	.06	.40	-.06	9. Much direct control - Little direct control
10	.08	.28	.10	-.22	.87	.08	10. Emphasized learning - Lack of concern for learning
11	-.08	.37	.21	-.05	.06	-.13	11. Jokes, Laughs - Serious
12	.43	.60	-.31	-.11	.10	-.12	12. Frequently punishes - Gives support
13	.49	.37	-.73	-.06	-.03	-.01	13. Much emotional evidence of frustration - Little evidence of emotional frustration
14	-.05	.84	.17	.00	.21	.06	14. Vigorous - Quiet
15	.01	.49	.14	.12	.54	-.13	15. Functions often as a source of knowledge - Functions seldom as a source of knowledge
16	-.36	-.15	.05	-.23	-.01	.02	16. Delegates much authority - Delegates little authority
17	.18	-.13	-.05	-.09	.18	.01	17. Spends much time working alone - Spends little time working alone
18	.72	-.16	-.31	.00	-.30	.03	18. Negativistic - Positive
19	-.80	-.06	.01	.63	-.26	.05	19. Permits great variety of activities, noise, etc. - Activities very orderly
20	.06	.80	-.06	.35	.32	-.01	20. Very verbal - Little verbal behavior
21	-.03	-.61	-.03	.08	-.75	.07	21. Low achievement motivation - High achievement motivation
22	.87	.06	-.18	-.26	-.01	.02	22. Low affiliation motivation - High affiliation motivation
23	-.11	-.75	-.03	-.12	-.29	.45	23. Low recognition motivation - High recognition motivation
24	.43	-.02	-.76	-.18	.08	-.01	24. Neuroticism - High ego strength

The interpretation of the factors follows. In each case the main factor loadings will be presented together with a description of the variables which each involves. When a negative factor loading is involved in the matrix of rotated factors, the sign has been reflected in the following factor descriptions and so too have the poles of the corresponding rating scale. This procedure has been adopted to facilitate the interpretation of the material.

Factor I

Loading	Variable
.88	Inflexible-adaptable
.87	Little affiliation behavior-Much affiliation behavior
.85	Harsh-Kindly
.84	Hostile to students-Friendly to students
.81	Aloof-Responsive
.80	Activities very orderly-Permits great variety of activities
.74	Delegates little authority-Delegates much authority

Teachers high with respect to this factor are friendly, responsive, warm and permissive in contrast to teachers who are low who show the reverse characteristics. This factor corresponds closely to the X_o pattern described by Ryans and also to the first factor in the latter's study of elementary school teachers.

Factor II

Loading	Variable
.86	Vigorous-Listless
.80	Very verbal-Little verbal behavior
.77	Excitable-Controlled
.71	Much recognition behavior-Little recognition behavior
.63	Stimulating-Dull

This factor differentiates the vigorous dynamic teacher from the teacher who is quiet, dull, and listless. This factor corresponds well with the pattern of teaching which Ryans symbolically denotes as Z_o.

Factor III

Loading	Variables
.76	Confident-Uncertain
.73	High ego-strength-Neuroticism
.73	Little evidence of emotional frustration Much evidence of emotional frustration

This factor represents a grouping of characteristics similar to that which has been found in many studies of personality, but it was not one which appeared in the Ryans study perhaps because of the nature of the variables rated.

Factor IV

Loading	Variables
.69	Spends little time working alone-Spends much time working alone
.35	Very verbal-Little verbal behavior

This factor relates to the tendency to work alone vs. the tendency to work with children and hence talk a great deal. The second rating scale was not used in obtaining a score for this factor.

Factor V

Loading	Variables
.87	Emphasizes academic learning-Little concern for academic learning
.75	Much "achievement" behavior-Little achievement behavior
.54	Functions often as a source of knowledge-Functions seldom as a source of knowledge
.52	Systematic and orderly classroom-Chaotic disorderly classroom.

This factor refers to the extent to which the teacher is achievement oriented and directs her behavior to academic goals. The pattern represented is similar to that described by Ryans as his Y_o pattern.

For the remainder of the study the Q-sort ratings were combined into factor scores. These were produced by adding together the scores from each of the defining variables listed above. The only exception to this was the score for Factor IV which was derived from the score for a single rating.

3. The Assessment of the Classroom Situation Through the Responses of the Pupils

An observer who spends time in the classroom interprets the learning situation in terms of his own adult perceptions. If, from time to time, he observes the reactions of the pupils he is likely to come to the conclusion that their responses are somewhat different from his own. Those engaged in the project and who participated in the classroom observation procedures can remember a room in which the teacher characteristically shouted at the children and appeared to treat them with roughness. An observer first entering this room would respond with anxiety and wonder how the children could stand the situation day in and day out. However, a careful study of the responses of the children to this situation would leave no doubt that they were both relaxed and busy. They paid very little attention to the shouting and noise of the teacher, and, clearly, they were deeply attached to her. As the observer learned more about the situation in this particular room it became clear that not only were the pupils fond of the teacher but the teacher, despite all of her blustering and noise, loved the children who accepted her as a noisy but warm and affectionate person. For this reason the study, as originally planned, was designed to include a means whereby the reactions of the pupils to the classroom stiuation could be determined.

The problem of assessing the responses of the pupil to the teacher and to the general learning situation is not a new one. Over twenty years ago William McCall (personal communication) developed a device for assessing the responses of pupils to the new activity program which had then been introduced into a number of experimental schools in New York City. The McCall device was a questionnaire administered to the pupils in the upper elementary grades. With this device McCall was able to compare the responses of the pupils in the new program with the responses of pupils who remained in the traditional program. Differences were found between the practices of the teachers in the old and the new programs as reported by the pupils. Although the McCall device had some validity for the purpose for which it was designed, it did not seem appropriate for the present inquiry. In the first place, it involves considerable reading skill and hence can be used in only the upper grades of the elementary school while our present inquiry was focused at a lower level. Second, the aspects of the classroom program covered by the device have little relevance for the present inquiry.

a. The Drawing Technique. After considerable search for a suitable technique which could be used in grades as low as the first and as high as the sixth, the project staff hit upon the idea of asking the children to make drawings of their teacher and class. Children's drawings have already had a long history as devices for determining the child's perception of his environment. Clinicians have used such a technique for exploring the child's perception of his relationship to his parents and to his peers. The techniques seemed appropriate for exploring the child's relationship to his teacher and to the learning situation in which he finds himself in school.

A preliminary study of the technique was made by Froerer (1960) whose procedure became the standard procedure used in all subsequent work on the project. Froerer's procedure was to arrange with the teacher the day and hour on which a class was to be visited. On entering the room she was introduced to the class by the regular teacher who in nearly all cases then left the classroom.

Froerer then passed out paper and read the following instructions:

"Write your name on the top, left hand corner of your paper. Put your room number under your name. Put your grade number under your room number. Now turn your paper over. On this side draw a picture of your class and your teacher. Don't use stick figures. You may arrange your drawing in any way you wish. This will be a quick drawing. We will take about twenty minutes."

These instructions were repeated a second time. Questions about the drawing were answered by the statement "You may arrange your drawings in any way you wish."

The basic general hypothesis in the Froerer study was that the elementary school classroom generally is an environment built and controlled by females and hence is an environment more congenial to female pupils than to male pupils. Since the environment is one less favorable to boys one would expect the drawings of the boys to manifest greater amounts of hostility and less of a positive attitude towards school than those of the girls. The data supported this hypothesis and led to the following conclusions:

1. That there is a sex difference in a student's concept of the teacher.

2. That the boys hold a preponderance of negative concepts of their teacher as measured by the drawings.

3. That the girls hold a preponderance of positive concepts of their teacher as measured by the drawings.

4. That the girls show a decrease in positive concepts as they advance in the grades. However, even in the higher grades they show a preponderance of positive concepts.

5. That the boys do not show an increase in negative concepts of their teacher nor do they show an increase in positive concepts of their teacher as they advance in grade.

The promising nature of this technique and the results achieved by Froerer led to its adoption in the research project. Every classroom included in the study was later visited for the purpose of collecting drawings of the pupils. In order to make the conditions for collecting the drawings as uniform as possible, all these data were colleted by Gayle Froerer or by a teacher Mrs. L. Hansen. The help of both of these is gratefully acknowledged. Since the majority of elementary school pupils are used to a class controlled by a woman, the choice of a woman research assistant for this purpose seemed appropriate. The drawings were collected in every case by the procedure which has been described.

While the drawings were collected from every class included in the study, not all drawings were appropriate for the purposes of the research. The drawings from the kindergarten lacked many of the properties which made the drawings scoreable and included a large number of scribbles. Children in the sixth grade and in a few seventh grades studied were not in self contained rooms and hence had been exposed to several teachers during the several months of the school year which preceded the collection of the drawings. The data from these higher grades were discarded.

All drawings were collected after the pupils had been exposed mainly to a particular teacher for at least six months of the school year. This procedure was adopted in the hope that there would then be a maximum influence of the classroom created by the present teacher on the drawings.

The drawings were scored for the extent to which the teaching situation portrayed or reflected a classroom emphasizing achievement, affiliation, or control behavior on the part of the teacher. The hope was that the drawings would reflect the extent to which the practices of the teacher were dominated by one or another of these needs. Froerer, who developed the procedure for scoring for affiliation behavior, had already demonstrated that high agreement could be reached by judges in this area.

b. Scoring Procedures. The drawings were scored on three dimensions intended to reflect the child's perception of: 1. the amount of control exerted by the teacher over students behavior; 2. the extent to which the classroom atmosphere emphasized academic matters; 3. the teacher herself--whether the child perceived the teacher as a distant and antagonistic person (i.e. rejected her) or whether he perceived her as a warm, interacting person. After considerable time was spent in becoming familiar with the great variety of features present in the drawings, the following criteria (guide-lines is probably a better term) were developed:

Control. Each drawing was independently assigned one of four possible scores by each of two judges. Three of these were intended to reflect a continum of control with 1 indicating a high degree of control, 2 a moderate amount, and 3 very little control. The fourth score was assigned to those drawings wherein a judgement as to extent of control could not be made--in almost all cases these are drawings which contain no persons. These drawings were omitted from further analysis. The following criteria were established for the 1 to 3 scores:

1. Much control:	(a) The teacher is drawn in a clearly directive fashion--e.g. pointing to material on board, talking to students who are facing her, etc.
2. Intermediate:	(a) The children are seated at their desks or drawn in a traditional setting.
3. Little control:	(a) The drawing contains only children engaged in no particular activity. They may be grouped or not. (b) The drawing contains children and teacher either engaged in no particular activity or engaged in a mutual activity--the teacher is not directing.

It must be emphasized that these criteria do not make the scoring process as objective as one would like. After considerable time and effort the two judges who scored all drawings for control assigned the same value to 74% of the drawings. The percentage perfect agreement between judges for individual teachers ranged from 46 to 95. The percentage of perfect agreement reached 70% or better for 80% of the cases. The extent of extreme (i.e. 1 vs 3) disagreement was very small (less than 1%). Furthermore, the mean scores assigned to each teacher, based on from 20 to 25 drawings, agree very closely. The final score used for each teacher was the mean of the sum of the scores assigned to each drawing by the two judges.

Academic emphasis. Each drawing was independently assigned to one of two possible categories by each judge. The drawing was either judged as indicating academic emphasis or not. The criteria for the former judgement included the following:

(a) The presence of academic materials in the room. The most common is a blackboard with arithmetic problems, words or an assignment on it. Other examples are the drawing of books, maps, and alphabet letters.

(b) The children drawn as busy with paper and pencil, reading etc.

The percentage agreement on these scores was 94%. Agreement was less than 85% for only 8% of the teachers. The score used for each teacher was the percent of drawings in her class which were agreed upon by both judges as showing academic emphasis.

Acceptance-Rejection of teacher. This score was developed by Gayle Froerer as part of her Master's Degree Thesis. Each drawing was assigned to one of three categories as follows:

- (1) *Positive interaction*
  - (a) Close proximity between teacher and student(s)
  - (b) Pleasant, visible expressions on the faces of teacher and student(s)
  - (c) Similarity of activity of teacher and student(s)
  - (d) Apparent pleased apperance of student(s) when teacher is dominant figure
  - (e) Size of teacher and student(s) proportional
- (2) *Rejection*
  - (a) Teacher well defined and student(s) not well defined
  - (b) Aggressive motions of teacher toward student(s)
  - (c) Passive student(s) and active teacher
  - (d) Apparent forced attention of student(s) by teacher

(e) Heavy shading of teacher contrasting with light shading of student(s)
(f) Extreme distance between teacher and student(s)
(g) No similarity of activity between teacher and student(s)
(h) Presence of only teacher or only student(s)
(i) No facial features on teacher while student(s) has features

(3) No score. The drawing could not be scored in either of the other categories. This category accounted for approximately twelve percent of the drawings.

Again it must be pointed out that these criteria serve only as guides in the judging process. Two judges who scored 417 drawings independently agreed on the placement of 83 percent of them. The rest of the drawings were categorized by one judge only. The score used for each teacher for the acceptance-rejection variable was the percent of the drawings of her class which were placed in the 'rejection' category.

CHAPTER V

THE COLLECTION AND ANALYSIS OF DATA

I THE POPULATION STUDIED

After the instruments had been developed, the next step was to utilize them to collect data on a sample of teachers so that the problem of predicting teacher behavior could be explored in the manner planned. The study was limited to women teachers since it was believed that sex differences might unnecessarily complicate the research. The teachers on whom the data were collected consisted of two samples from two different school systems. These will be referred to here as Sample 1 and Sample 2 and will be described separately in the paragraphs that follow.

Sample 1. The teachers in this sample were all employed by a large metropolitan school district. The district office, through which facilities were made available, was asked to identify four elementary schools in different parts of the city which could be included in the study. The schools were to be ones run by a principal who had a favorable attitude towards research and who also had good relationships with his staff. The thought was that under such conditions cooperation would be most likely obtained from the teachers. Each principal was contacted with an introduction from the Office of the Superintendent and the general nature of the project was explained. The principal then arranged to introduce the scientists of the project to the teachers at a meeting. At this meeting the general nature of the project was explained in terms which were accurate yet sufficiently brief and general that the information would not prejudice the outcomes by introducing biases into the way in which the teachers subsequently filled out the test forms. The theme used in making these presentations was that the study was concerned with styles of teaching and the relation of these to the characteristics of the teachers. No mention was made that this was a study of the motivation of teachers.

The teachers in this sample varied in both age and experience, covering the entire possible range. The young and inexperienced teachers tended to be assigned to the lower grades, a fact which may influence some of the relationships reported in this chapter. While no information was available on the age of the teachers, those who worked with them would estimate their average age at 40 years and the range extending from 22 to 60.

Generally good cooperation was obtained. Only three teachers in this sample refused to admit the project staff to their classrooms, though these were friendly in their relations with the staff in all other respects. A fourth teacher admitted staff members to her classroom but with such reluctance and antagonism to the whole research project that further contacts with this teacher were not made. With these exceptions, the teachers in the four schools were highly cooperative and altogether classroom observations were collected on a total of 83 teachers. Since the teachers were told that they had every right not to admit one of the research workers to their classrooms if, for some reason a visit was not convenient, there were a few occasions when the investigators were asked to return at a later time. Sometimes such a request was made because a tense situation had developed and sometimes because the teacher simply did not feel like having a visitor at that particular time. Such occasions were rare and did not amount to more than five or six such incidents.

The four schools from which the sample was derived served widely differing neighborhoods and covered every socio-economic level. They also varied in equipment from a modern building with the latest facilities to an old building which had been to some extent renovated.

Altogether 83 teachers were observed according to the procedure described in Chapter 4. However, it was not possible to obtain from all of these teachers a complete set of test results and a few teachers moved out of the area before the test battery could be administered. The result of these problems was that the sample on which complete data were obtained was reduced to 77 cases. When reference is made to Sample 1, a sample of 77 cases is indicated. The grade range for this sample is kindergarten through six.

Sample 2. The teachers in this sample were all employed by a large school district including many small towns and rural areas. Two schools were selected by the superintendent of the district for inclusion in the study, the selection being based on their relative proximity to the University of Utah, the cooperativeness of the principals, and their size was such that each would have available about twenty teachers. Both of the schools served small towns which could be considered to be mainly residential areas of a large neighboring city. The children were mainly middle class. The procedure described in connection with the previous sample were used for introducing the study to the teachers. In the two schools one teacher refused to participate in the study. Altogether 41 teachers were observed in the two schools and complete data were collected on 41. When reference is made to Sample 2, a sample of 41 cases is indicated. The grade range for this sample is one through five. No kindergartens were taught in these two schools and all sixth grade teachers were male.

The data analysis was the same for both samples except that two instruments were added to the measures filled out by the teacher in Sample 2; the self-ratings and the Van Fitt Series Wishes.

The procedure followed in the analysis of data was to keep separate the data in the two samples previously described. Through this procedure the possibility was provided of developing hypotheses by examining the one sample and then checking the hypotheses on the second sample. Opportunities for cross-checking from sample to sample offer considerable advantages.

For certain aspects of the inquiry a combination of samples was required in order to raise the number of cases to a satisfactory level For example, in order to conduct the pattern analysis described in Chapter 6, all available cases had to be used since only a small fraction of those available fit the patterns that it is desired to contrast. Again, in the study of the drawings produced by children the sample was limited to classrooms in the grade range of 1 to 3, and all available cases had to be studied in order to obtain an adequate sample.

II FINDINGS

The findings are presented in the following sequence:

1. Comparison of the two samples on the various measures.
2. Data pertaining to the criterion measures (teacher behavior).
    a) Ratings
    b) Q-sorts
    c) Teacher statements
    d) Correlations among the criterion measures
3. Data pertaining to the predictor measures (paper and pencil devices).
    a) Teacher Preference Schedule
    b) Utah Study of Behavior
    c) Situations and Objectives Tests
    d) Self Ratings
    e) Van Pitt Series Wishes
    f) Correlations among the predictors
4. Relationships between predictors and criteria.
5. Relationship of predictor and criterion measures to grade taught.
6. Relationships between pupil drawings and the various teachers measures.

1. Comparison of the Two Samples On the Various Measures

Table 3.01 shows the means and standard deviations on the predictor and criterion measures. In general, the results are very similar for the two groups. Among the criterion measures the only significant differences occur for Teacher Statements Achievement, where the Sample 2 mean is significantly higher and for Teacher Statements Management where the Sample 2 mean is significantly lower. Aside from an occasional difference, the differences on predictors occurs primarily on the Teacher Preference Schedule and suggest that Sample 2 teachers are, as a group, lower in Non-directive, Pre-adult and Exhibitionistic needs and higher in need for Order and in Dependency need.

Distributions for all measures were plotted for Sample 1 only. The distributions of the criterion measures were, with two exceptions, unimodal and roughly "normal." The two exceptions were the Teacher Statements Affiliation scores which were highly skewed, indicating that most teachers made very few such statements; and Factor I scores which were essentially rectangular in distribution. These findings indicate that correlations with Teacher Statements Affiliation are likely to be low due to the restricted range and that significance tests of correlations involving these measures may be somewhat in error. The predictor measures all give distributions which could reasonably be expected to represent samples of normal distributions.

2. Criterion Measures

a. Ratings. Independent ratings were made by two observers on a total of 33 dimensions. Prior to making the ratings, each dimension was discussed in an attempt to insure common behavior definitions. Three rating scales were dropped in preliminary analyses because it was clear that they did not discriminate between teachers. It should be noted that the dimensions are "summary" types of dimensions, i.e. they do not specify specific acts as do some devices -- notably the OSCAR developed by Medley and Mitzel. Although the latter type device has obvious advantages in objectivity, the time involved in its use made it in appropriate for our study since the time spent in observation was used to record verbal statements as well as general observations.

The agreement between raters, indicated in Table 5.02 for each of the dimensions is typical of rater agreement on such characteristics and seems to justify the summing of the two ratings of the two observers to obtain one rating score for use as a criterion measure. One would expect the summary measure to be more meaningful than eitherof the individual ratings since extremes of the summary score are cases which are agreed upon by both raters; cases of disagreement will receive summary scores in the middle of the distribution. There is, nonetheless, a real question as to the usefulness of ratings with agreement as low as r = 0.19 which is correlation between observers for the Affiliation dimension. As will be seen, however, these summary ratings, including Affiliation do relate in meaningful ways with other measures.

Intercorrelations among the ratings on the four dimensions directly related to our theoretical formulation i.e. Achievement, Affiliation, Recognition, and Control behaviors are shown in Table 5.03. The upper of the two correlation coefficients is based on Sample 1, and that based on Sample 2 is the lower one in parentheses. It should be noted that these ratings are intended to summarize teacher behavior within each of these categories (affiliative etc.); they are not judgements as to the strength of needs. Perhaps the most interesting of these correlations is that between Affiliation and Control (-.50 and (-.63)) which indicates a rather strong tendency for teachers rated warm and affiliative to be rated as low in controlling behavior, and

Table 5.01

Means and Standard Deviations for Selected Variables

Variable	**Sample**			
	I N = 77		II N = 41	
	$\bar{X}$	σ	$\bar{X}$	σ
TEACHER PREFERENCE SCHEDULE				
1 Practical	36.57	7.42	33.95	7.68
2 Status	44.51	6.74	43.29	7.8652
3.Nurturant	50.51	5.37	50.07	6.45
4 Non-directive	49.44	4.88	46.00	6.12
5 Rebellious	37.16	10.20	35.29	9.72
6 Pre-adult Fixated	44.88	6.28	41.59	8.60
7 Orderliness	35.38	8.83	41.68	7.08
8 Dependency	36.51	6.10	39.56	6.94
9 Exhibitionistic	46.73	5.46	44.49	5.97
10 Dominance	32.70	8.21	33.34	8.31
Achievement	55.60	7.50	55.29	8.92
Affiliation	69.69	7.46	67.22	9.83
Recognition	69.55	7.00	66.80	9.29
Control	52.18	11.23	55.10	9.03
OBJECTIVES OF EDUCATION				
Achievement	69.91	10.06	73.56	8.59
Affiliation	71.64	11.02	74.05	9.21
Recognition	55.34	7.56	58.44	7.45
Control	61.09	8.94	64.34	9.20
REACTIONS TO SITUATIONS				
Achievement	169.66	16.13	170.76	16.41
Affiliation	132.27	15.45	138.17	14.37
Recognition	76.32	13.65	81.00	15.39
Control	73.39	15.25	75.76	15.56
UTAH STUDY OF BEHAVIOR				
Achievement (Rating Score)	26.66	9.34	27.04	9.43
Affiliation (Rating Score)	47.21	11.30	44.12	9.65
Recognition (Rating Score)	28.40	9.71	28.85	8.18
Control (Rating Score)	25.55	9.22	24.80	9.90
Factor I	22.92	8.90	23.51	8.17
Factor II	18.52	6.47	19.00	5.62
Factor III	12.09	4.43	12.17	3.92
Factor IV	4.01	1.69	4.00	1.56
Factor V	14.71	5.43	15.07	5.38
Grade Taught	3.06	2.00	2.66	1.32
Total Achievement Rating	9.73	2.20	8.93	2.43
Total Affiliation Rating	7.32	2.19	6.98	2.46
Total Control Rating	8.77	2.72	8.89	2.34
TEACHER STATEMENTS				
Achievement	37.87	11.58	43.85	9.45
Affiliation	2.21	2.39	1.85	1.94
Control	23.90	8.27	23.39	8.24
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

those rated as cold and non-affiliative to be rated as controlling. Thus, there is support for the rather widespread stereotypes of the "authoritarian vs. permissive" teacher. The extent of this relationship was rather surprising to the investigators whose biases led them to expect a lower correlation. There are, however, some teachers who were rated as "cold-permissive" or "warm-controlling" but they are a distinct minority.

Table 3.02

Agreement between two raters on 30 characteristics. *

.20	Aloof vs. responsive
.58	Harsh vs. kindly
.42	Dull vs. stimulating
.53	Stereotyped vs. original
.30	Excitable vs. apathetic
.38	Uncertain vs. confident
.29	Disorganized vs. systematic
.43	Inflexible vs. adaptable
.37	Emphasized learning vs. relaxed re-learning
.18	Overdramatic vs. shy
.41	Jokes, laughs vs. serious
.20	Criticized openly vs. little criticism
.42	Praises often vs. little praise
.37	Punishes often vs. little punishment
.34	Evidence of frustration vs. little frustration
.32	Very vigorous vs. listless, quiet
.35	High academic standards vs. low standards
.43	Gives much encouragement vs. little encouragement
.44	Much individualization vs. little individualization
.15	Functions often as source of knowledge vs. little such function
.30	Delegates much authority vs. delegates little authority
.35	Much grouping vs. little grouping
.28	Spends little time working alone vs. much time alone
.38	Negativistic vs. generally positive
.15	Permits great variety of activities, noise etc. vs. orderly activities
.38	Very verbal vs. little verbal behavior

.27	Achievement
.19	Affiliation
.30	Recognition
.44	Control

* Based on Sample 1, $N = 77$, $r_{.05} = .22$.

Table 5.03

Intercorrelations Among Ratings *

	Aff.	Rec.	Con.
Ach.	-.31 (-.27)	.48 (.19)	.38 (.42)
Aff.		.07 (-.05)	-.50 (-.63)
Rec.			.39 (.40)

* Sample 1, N = 77, $r_{.05}$ = .22.

Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

It is also interesting to note that teachers seen as achievement oriented were seen as lower in affiliation and higher in controlling behavior. Thus, the warm, permissive teachers as discussed earlier also tend to be seen as less achievement oriented. There is also a tendency for the teacher seen as controlling to be seen as exhibitionistic (recognition behavior) though recognition is not related to affiliation. The relationship between achievement and recognition behaviors varies considerably from one sample to the other.

b. Q-sort factors based originally on the same dimensions employed in the ratings. Since each teacher had been assigned a score for each dimension used in the Q-sorts, it was possible to determine a factor score for each. Table 5.04 indicates the intercorrelations among the factor scores. The first point to be noted is that there are substantial correlations between certain of the factor scores. Thus, in spite of the fact that the factor analysis maintained orthogonal factors, these independent factors tend in some cases, to produce correlated factor scores as applied to this sample of teachers. The nature of the correlations among factor scores varies considerably from Sample 1 to Sample 2. Thus, for Sample 1 the correlation between scores on Factors 1 and 3 indicates that the teacher who was viewed as warm and permissive also tended to be viewed as non-anxious and emotionally stable, but the relationship was much less marked in Sample 2.

The correlation between scores on Factors 2 and 5 indicates that teachers viewed as stimulating appear more concerned with school learning as such. In Sample 2, the magnitude of correlations shifts such that Factor 1 (warm, permissive vs. cold, controlling) scores correlated more highly with Factor 4 (little time alone) scores rather than Factor 3 (ego strength) scores.

Since there are no other criteria (other than ratings) which are logically related to Factors 2 and 3, the possibility exists that these factors themselves as well as subsequent factor scores reflect a bias common to the observers rather than a description of behavior. Factors 1 and 5 are on more solid ground since they are related to an objective criterion--teacher statements--as will be discussed in a subsequent section.

Table 5.04

Intercorrelations Among Factor Scores *

		F_2	F_3	F_4	F_5
Warm, permissive--cold, controlling	F_1	.07 (-.16)	.62 (.34)	.27 (.62)	.12 (.28)
Quiet controlled, dull--stimulating, active	F_2		.00 (-.04)	-.12 (-.31)	.55 (.28)
High ego strength--low ego strength	F_3			.13 (.02)	-.23 (-.31)
Spends much time alone--little time alone	F_4				.12 (.20)
Little concern with academic achievement--much concern	F_5				

* Sample 1, N = 77, $r_{.05}$ = .22.

Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

c. Teacher statements. The scoring system applied to the teacher statements results in four scores of interest here, each of which is obtained by combining frequencies over several categories. The four scores are intended to measure the frequency of statements pertaining to: 1. matters of academic achievement; 2. control of student behavior; 3. affiliative behavior toward students; and 4. matters of classroom management.

Analysis of variance was used to estimate the reliabilities of the four scores obtained from the classification of teacher statements. Hoyt (1941), was one of the first to point out the advantages of using analysis of variance for estimating reliabilities. A very common procedure for estimating the internal reliability of a test is to split it into halves by assigning the odd items to one-half and the even items to the other half. The reliability coefficients obtained between the halves are then corrected to represent the whole test by the Spearman-Brown formula. Hoyt points out that reliabilities obtained in this way are partly a function of the particular split of the items, which on any given occasion may or may not be an accurate indication of the internal consistency of the test. Estimating reliability using analysis of variance avoids this difficulty since splitting the test is unnecessary.

The analysis of variance method for estimating reliability has been shown to be particularly well suited to observational data. In a recent study (Medley & Mitzel, 1958), the reliability of two classroom observation techniques was estimated using the analysis of variance procedure. One of the observational techniques analysed by Medley and Mitzel was the Withall technique previously discussed. The following reliability coefficients were obtained for the six Withall categories: Learner-supportive .25, problem-structuring .50, neutral .00, directive .50, reproving .00, and climate index .47. The statements were collected by two observers working as a team. One hundred statements were collected during each of eight visits to four teachers.

The procedure used to estimate the reliabilities in the present study followed the one-dimensional design described by Lindquist (1953). This design is used when there are n scores for each of a number of subjects and the reliability of the mean or sum of these n scores is to be computed. The data consisted of four scores on each of 77 teachers, (Sample 1 only) (two observers each collected two sets of 25 statements). The formula derived by Lindquist to estimate the reliability in such a design is,

$$R = \frac{MS_t - MS_e}{MS_t + (n/k-1)(MS_e)}$$

where MS_t represents the variance among teachers, MS_e represents the residual error variance, n is the number of scores, and k is the number of columns. Since in this case both n and k equal four, the right hand portion of the denominator drops out and the formula becomes

$$R = \frac{MS_t - MS_e}{MS_t}$$

Tables 5.05 through 5.08 on the following pages contain the summaries of the analyses of variance for the four scores obtained from our classification of teachers' verbal statements; academic achievement emphasis, controlling, affiliation, and management. The hypothesis was tested that these scores discriminate among teachers, and the F-ratios and probability values calculated are shown in the tables. All four F-tests were significant beyond the .001 level of confidence. The columns mean square shown in these tables represents the differences between observers and their first and second set of statements. F-ratios of the columns variance over the residual error variance were not significant for any of the scores. The estimated reliability coefficients are shown beneath the tables for each score. These coefficients compare very favorably with those obtained by Medley and Mitzel.

Table 5.05

Analysis of Variance Reliability Estimate for the Academic Achievement Emphasis Score.

Source	SS	df	MS	F	P
Columns	45.58	3	15.19		
Among Individuals	2337.49	76	30.76	1.94	.001
Residual	3607.93	228	15.82		
Total	5991.00	307	19.51		

$$R = 1 - \frac{15.82}{30.76} = .496$$

Table 5.06

Analysis of Variance Reliability Estimate for the Controlling Score

Source	SS	df	MS	F	P
Columns	31.43	3	10.48		
Among Individuals	1297.59	76	17.07	2.28	.001
Residual	1709.82	228	7.50		
Total	3038.84	307	9.90		

$$R = 1 - \frac{7.50}{17.07} = .561$$

Table 5.07

Analysis of Variance Reliability Estimate for the Affiliation Score.

Source	SS	df	MS	F	P
Columns	1.06	3	.35		
Among Individuals	107.36	76	1.41	2.17	.001
Residual	147.94	228	.65		
Total	256.36	307	.84		

$$R = 1 - \frac{.65}{1.41} = .54$$

Table 5.08

Analysis of Variance Reliability Estimate for the Management Score.

Source	SS	df	MS	F	P
Columns	13.13	3	4.38		
Among Individuals	1163.36	76	15.31	1.88	.001
Residual	1853.87	228	8.13		
Total	3030.36	307	9.87		

$$R = 1 - \frac{8.13}{15.31} = .47$$

Intercorrelations among these measures are shown in Table 5.09. Some degree of negative relationship is inevitable since the number of responses is fixed and each response contributes to only one dimension. However, the correlation between Achievement and Management is considerably higher than the others and suggests that achievement oriented teachers devote less time to strictly management activities. The +.25 correlation between Affiliation and Management in Sample 1 is even more unexpected and indicates a tendency for affiliative behavior on the part of the teacher to be accompanied by considerable attention to management functions although this relationship is much weaker in Sample 2.

Table 5.09

Intercorrelations among teacher statement scores. *

	Aff.	Con.	Man.
Ach.	-.32 (.06)	-.31 (-.43)	-.56 (-.62)
Aff.		-.25 (-.21)	.25 (-.04)
Con.			-.38 (-.13)

* Sample 1, N = 77, $r_{.05}$ = .22.
Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

The results, in general, differ in the two samples in that the expected negative correlations are generally lower for Sample 2. Whether this is attributable to differences in the samples or to sampling error cannot be determined. (The standard error of the difference between the r's is .19.)

4. Intercorrelations among Criterion Measures. Table 5.10 shows the intercorrelations among the teacher statements, ratings, and Q-sort factors. The major finding is that the measures of Control and Affiliation are related in a consistent fashion within and across the three instruments. The correlation between the Teacher Statement Measure and the ratings are .33 and (.41) for Affiliation and .43 and (.28) for Control. Factor 1 which is a combination of the affiliation and control dimensions correlates .26 and (.38) with the Teacher Statement, Affiliation score .62 and (.68) with Rating measures of Affiliation, -.39 and (-.50) with the Teacher Statement Control score and -.54 and (-.62) with Rating measures of Control. These results are consistent with the negative correlations between affiliation and control on both the Teacher Statements and Ratings as reported previously.

The remaining correlations between factor scores and ratings are, in general, as expected though it must be kept in mind that these do not constitute independent assessment techniques since both are based on observer classifications of teacher characteristics. The correlations which are in accord with expectations are: -.77 and (-.55) between Factor 2 (dull) and Rating on Recognition; .31 and (.63) between Factor 4 (little time spent alone) and Rating on Affiliation; -.73 and (-.60) between Factor 5 (non-achievement oriented) and Rating on Achievement. The correlations between Ratings on Control and Affiliation with Factor 3 (high ego strength) are -.34 and .38 for Sample 1 and are consistent with other relationships found between variables. The correlations between Factor 2 (dull) and Ratings on Achievement and Control (-.46 and -.45) are to be expected since this Factor is apparently primarily a 'recognition' factor and the correlations among ratings on achievement, recognition and control are all substantial for Sample 1. These correlations are all lower in Sample 2 since the correlations among factors and ratings changed somewhat from Sample 1 to Sample 2. The same explanation applies to the correlations of -.44 and -.34 between Recognition and Control Ratings and Factor 5 which is essentially an 'achievement orientation' factor.

Thus, in summary, the ratings and factors show the internal consistency one should expect since they are two approaches based on the same original information: observer impressions.

As mentioned previously the Teacher Statements measures provide support for the observational measures of affiliation-control dimensions and combinations thereof, though the support is not as clear-cut as one could wish. The correlations between Teacher Statements Affiliation and Achievement Rating in Sample 1 -.45 and between Teacher Statements Management and Recognition Rating in Sample 2 (.34) are close to zero in the other sample. The Teacher Statements Achievement measure provides only slight support for the observational measures of achievement orientation since the correlations are .11 and (.21) with Achievement Rating and -.25 and (-.09) with Factor 5.

Table 5.10

Teacher Behavior Measures - Intercorrelations *

	T.S. Ach.	T.S. Aff.	T.S. Con.	T.S. Man.	Rat. Ach.	Rat. Aff.	Rat. Rec.	Rat. Con.	Grade Taught
Factor 1	-.07 (.23)	.26 (.38)	-.39 (-.50)	.26 (.01)	-.20 (-.15)	.62 (.68)	-.09 (-.02)	-.54 (-.62)	-.20 (-.05)
Factor 2	.00 (-.20)	.03 (-.11)	-.22 (-.16)	.16 (.29)	-.46 (-.24)	.05 (-.24)	-.77 (-.55)	-.45 (-.20)	-.21 (.04)
Factor 3	.13 (.01)	.14 (-.08)	-.42 (-.15)	.17 (-.06)	.14 (.30)	.38 (.02)	.02 (.15)	-.34 (-.01)	-.06 (.02)
Factor 4	.03 (.01)	.05 (.30)	.12 (.29)	-.21 (.14)	-.21 (.02)	.31 (.63)	-.01 (.07)	.02 (-.47)	-.29 (-.23)
Factor 5	-.25 (-.09)	.27 (.18)	-.02 (-.33)	.14 (.26)	-.73 (-.60)	.14 (.18)	-.44 (-.33)	-.34 (-.51)	-.43 (-.09)
Teacher Statements Achievement					.11 (.21)	.00 (.07)	-.14 (.16)	-.02 (.15)	.17 (.14)
Teacher Statements Affiliation					-.45 (-.09)	.33 (.41)	.22 (-.02)	-.33 (-.30)	-.34 (-.12)
Teacher Statements Control					.12 (.11)	-.30 (-.31)	.22 (.05)	.43 (.28)	.24 (.25)
Teacher Statements Management					-.10 (-.09)	.14 (.07)	-.06 (-.34)	-.15 (-.29)	-.21 (.14)
Rating Achievement									.52 (.18)
Rating Affiliation									-.25 (-.20)
Rating Recognition									.15 (.13)
Rating Control									.26 (.17)

* Sample 1, N = 77, $r_{.05}$ = .22. Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

3. Predictor Measures

a. Teacher Preference Schedule. Table 5.11 shows the intercorrelations among the scales of this schedule. The pattern of intercorrelations differs considerably in the two samples, primarily in that the correlations are in general much higher for Sample 2. An inspectional cluster analysis was performed for each sample with the results shown in Table 5.13. Table 5.13 also includes the results of the same analysis applied by Stern and Masling to two other samples of teachers in New York State. The method of analysis is simply to enter a plus for each pair or more of variables which correlate above an arbitrary criterion,--in this case .30. Although the results differ among samples, in Sample 2 as compared to the other three, there are some consistencies. Thus, for example, dominance was not correlated with any of the three measures described as nurturance, pre-adult fixated and non-directive, in any of the samples. There is a general progression from scales which measure needs which would be expected in the "teacher centered" teacher to those logically appropriate to the "child centered" teacher. Table 5.11 also shows the correlations between the original scales and our scales of the four needs derived from the instrument. The correlations with Affiliation, Recognition, and Control are as expected. The Achievement score was used with some hesitation since there were few items which seemed to fit our conception of achievement very well. This score relates primarily to dominance, orderliness, and status.

b. Utah Study of Behavior. Table 5.12 shows the intercorrelations among the four USB measures. All the correlations are significant and substantial. This finding is somewhat surprising inasmuch as the device, as constructed, was intended to produce low intercorrelations, and did so with respect to a sample of 98 female undergraduate education majors wherein all correlations were low except between Recognition and Control, which were correlated .38. However, an earlier sample of teachers had also shown relatively high intercorrelations.

Table 5.12

Intercorrelations Among USB Scales

	Teacher Samples *				Undergraduate Female Samples **		
	Aff.	Rec.	Con.		Aff.	Rec.	Con.
Ach.	.42 (.24)	.23 (.29)	.19 (.40)	Ach.	.15	.04	.23
Aff.		.38 (.37)	.48 (.55)	Aff.		.14	.05
Rec.			.47 (.53)	Rec.			.38

* Sample 1, N = 77, $r_{.05} = .22$.
Sample 2, (in parentheses), N = 41, $r_{.05} = .22$.
** Sample of 98 female undergraduates.

Table 5.11

Intercorrelation Among Teacher Preference Schedule Scores *

	St.	Nur.	Non.	Reb.	PA	Ord.	Dep.	Ex.	Dom.	Ach.	Aff.	Rec.	Con.	Tot.
Practical	-.27 (-.06)	-.28 (-.05)	-.23 (-.09)	-.08 (-.14)	-.09 (-.15)	.22 (.[illegible])	.01 (-.11)	-.07 (.03)	.41 (.46)	.08 (.12)	-.14 (-.10)	.01 (-.01)	.38 (.34)	.20
Status		.48 (.55)	.06 (.30)	.41 (.64)	.26 (.28)	.30 (.31)	.37 (.44)	.19 (.42)	.12 (.14)	.27 (.50)	.42 (.37)	.57 (.77)	.08 (-.06)	.48
Nurturant			.13 (.59)	.20 (.39)	.41 (.72)	.14 (.35)	.37 (.52)	.22 (.46)	-.01 (.09)	.09 (.45)	.58 (.79)	.34 (.60)	-.06 (-.25)	.32
Nondirective				.07 (.19)	.44 (.51)	-.38 (.10)	.00 (.45)	.36 (.56)	-.46 (.02)	.00 (.31)	.29 (.66)	.11 (.53)	-.71 (-.50)	-.25
Rebellious					.10 (.19)	.04 (.11)	.20 (.31)	-.01 (.22)	.00 (-.06)	.21 (.36)	.24 (.23)	.15 (.47)	-.05 (-.20)	.19
Pre-Adult Fixated						.01 (.33)	.18 (.44)	.56 (.51)	-.11 (.05)	.05 (.39)	.79 (.88)	.39 (.47)	-.18 (-.30)	.34
Orderliness							.57 (.41)	.03 (.32)	.64 (.51)	.40 (.60)	.07 (.43)	.23 (.41)	.67 (.37)	.61
Dependency								.04 (.44)	.25 (.20)	.16 (.34)	.26 (.53)	.26 (.52)	.20 (-.11)	.36
Exhibitionistic									.13 (.09)	.21 (.53)	.37 (.59)	.70 (.76)	.02 (-.20)	.45
Dominance										.41 (.47)	-.02 (.23)	.29 (.21)	.91 (.74)	.73
Achievement											.05 (.48)	.19 (.52)	.31 (.20)	.60
Affiliation												.39 (.60)	-.07 (-.22)	.47
Recognition													.21 (-.15)	.66
Control														.70

* Sample 1, N = 77, $r_{.05}$ = .22. Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

Table 5.13

Teacher Preference Schedule Cluster Analysis (The letters along the top designate the clusters.) *

Scale	Sample 1								Sample 2														Stern and Masling N.Y. 1									Stern and Masling N.Y. 2						
	a	b	c	d	e	f	g	h	a	b	c	d	e	f	g	h	i	j	k	l	m	n	a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g
Practical	X								X														X									X	X					
Dominance	X	X							X	X													X	X										X				
Orderliness		X	X	X						X	X	X	X											X	X									X	X			
Dependency			X		X						X			X	X	X									X	X								X	X			
Rebellious						X									X		X								X		X	X				X			X	X		
Status-striving			X	X	X	X						X	X	X			X	X	X	X						X	X								X	X	X	
Exhibitionistic							X			X	X	X				X		X			X						X		X						X	X	X	X
Nurturant				X	X			X					X	X			X	X	X	X		X							X								X	
Pre-adult Fixated							X	X			X								X		X	X					X		X							X	X	
Non-directive		X					X									X				X	X	X						X	X				X					X

* Sample 1, N = 77, $r_{.05}$ = .22. Sample 2, N = 41, $r_{.05}$ = .31.

Two explanations for this disparity are suggested. The first is simply that the teachers and students differ in need structure. The teachers are, as a group, older and more experienced than the group of undergraduates. Further, they are the product of whatever selective factors serve to keep women in teaching for a number of years. Hence it may be that their need structure, as a group, is different. The second possible explanation is in terms of the measuring device itself. It may be that the teacher group, being more sophisticated with regard to both human behavior and testing devices, was reacting to the device in a different manner--perhaps by giving more "socially acceptable" responses. Finally, it is possible that changes occurred in the scoring procedure; perhaps the raters changed. This seems unlikely since the agreement among the three raters, working independently, remains as high as in previous data.

c. Situations Test and Educational Objectives Test. Correlations among the four measures on each of these devices are high, ranging from .30 to .74 as shown in Tables 5.14 and 5.15. The similarity of the correlations in the two samples is quite striking.

Table 5.14

Intercorrelations Among Scales of the Situations Test *

	Unadjusted				Adjusted		
	Aff.	Rec.	Con.		Aff.	Rec.	Con.
Ach.	.59 (.75)	.74 (.81)	.64 (.63)	Ach.	-.06 (.15)	-.50 (-.60)	-.49 (-.49)
Aff.		.63 (.80)	.39 (.44)	Aff.		-.39 (-.30)	-.66 (-.76)
Rec.			.71 (.68)	Rec.			.14 (.02)

* Sample 1, N = 77, $r_{.05}$ = .22.
* Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

Table 5.15

Intercorrelations Among Scales of the Educational Objectives Test *

	Unadjusted				Adjusted		
	Aff.	Rec.	Con.		Aff.	Rec.	Con.
Ach.	.71 (.75)	.43 (.36)	.60 (.55)	Ach.	.05 (.33)	-.49 (-.31)	-.40 (-.60)
Aff.		.30 (.22)	.46 (.44)	Aff.		-.61 (-.70)	-.57 (-.64)
Rec.			.67 (.67)	Rec.			.29 (.24)

* Sample 1, N = 77, $r_{.05}$ = .22.

Two explanations present themselves for the relatively large magnitude of these correlations. It may, in fact, be that these data support the USB data in indicating high relationships among these needs for these teachers. The deduction from this would be that these devices may discriminate among these teachers in terms of a general drive level--that some teachers are more motivated, across all the "needs" than others. If this were the case, we would expect each of the measures to be related in a consistent manner to at least some of the criterion measures and to other predictor measures. As will be discussed in a subsequent section, this is not the case nor is a summary score, indicating the overall tendency to score high--across all four needs--related to the criterion measures; hence there is no support for this explanation in the data. The other explanation is in terms of a response tendency to score items high or low. When this variable was removed by adjusting each score for the discrepancy between the sum of the four scores for the individual and the mean of such summary scores for the total group, the intercorrelations were, of course, reduced or made negative. However, with minor exceptions discussed subsequently, the adjusted scores do not relate to criterion measures any better than the non-adjusted.

d. Self-Ratings. The self-rating device was administered only to Sample 2. The means and standard deviations are shown in Table 5.16.

Table 5.16

Means and Standard Deviations of Self-Rating *

	Unadjusted		Adjusted	
	X	S.D.	X	S.D.
Ach.	26.6	4.4	26.6	2.1
Aff.	27.2	4.6	27.3	3.8
Rec.	19.3	4.1	19.2	2.5
Con.	20.0	4.6	20.0	3.7

* Sample 2, N = 41.

Table 5.17 shows the intercorrelations among unadjusted and among adjusted scores. In view of the general tendency toward substantial correlations among unadjusted scores, the low relationship between affiliation and control is interesting. When scores are adjusted for the tendency to score high on all items, all correlations are reduced or made negative as expected.

Table 5.17

Intercorrelations Among Self-Ratings *

	Unadjusted				Adjusted		
	Aff.	Rec.	Con.		Aff.	Rec.	Con.
Ach.	.46	.57	.58	Ach.	-.35	-.41	.11
Aff.		.56	-.07	Aff.		.00	-.80
Rec.			.27	Rec.			-.40

* Sample 2, N = 41, $r_{.05}$ = .31.

e. Van Pitt Wishes Test. This device also, was administered only to Sample 2. Table 5.18 shows the means and standard deviation of the various scores.

Table 5.18

Means and Sigmas for Van Pitt Scores *

	Score I		Score II	
Scale	X	S.D.	X	S.D.
belonging	.22	.42	5.78	2.32
achievement	.12	.33	6.46	1.80
econ-security	.22	.42	8.27	2.04
free from fear	.17	.38	7.15	1.74
love and affection	.02	.16	5.85	1.73
free from guilt	.15	.36	7.63	2.03
self respect and sharing	.07	.26	6.85	1.42
meaning and devotion	.07	.26	8.02	2.37
control	.05	.22	6.63	1.92

* N = 41.

f. Intercorrelations among predictors across instruments. Intercorrelations among the major scales of the predictor devices which were administered to both samples are shown in Table 5.19 and Table 5.20. The UBB, Situations, and Objectives devices each provide measures of achievement, affiliation, recognition, and control needs. The affiliation, control, recognition, and achievement scales which we devised for the Teacher Preference Schedule are also shown.

First, with respect to the dimensions of major interest: Achievement, Affiliation, Recognition, and Control, we note that the correlations among the four measures are very low for Achievement, Affiliation, and Recognition.

Table 5.19

Correlations Among Major Need Scales on Predictor Scales /Teacher Preference Schedule, Reactions to Situations, Educational Objectives/

	USB Ach.	USB Aff.	USB Rec.	USB Con.	Sit. Ach.	Sit. Aff.	Sit. Rec.	Sit. Con.	Obj. Ach.	Obj. Aff.	Obj. Rec.	Obj. Con.
TPS Ach.	-.08 (.06)	-.12 (-.11)	-.09 (-.28)	-.03 (-.31)	.19 (.01)	.15 (.17)	.12 (.24)	.19 (.15)	.15 (.24)	.10 (.17)	.10 (.40)	.12 (.31)
TPS Aff.	.05 (.22)	-.09 (.16)	-.12 (-.01)	-.23 (.08)	-.21 (-.03)	.13 (.13)	-.04 (-.02)	-.12 (-.13)	-.03 (.14)	.09 (.17)	-.07 (.33)	-.15 (.29)
TPS Rec.	.08 (.21)	.09 (.16)	-.02 (-.17)	-.11 (-.06)	.06 (-.15)	.15 (.00)	.17 (-.09)	.09 (-.11)	.13 (.16)	.14 (.25)	.19 (.45)	.02 (.32)
TPS Con.	.00 (.23)	.17 (.10)	.17 (-.09)	.27 (-.01)	.18 (.08)	.06 (-.01)	.27 (.23)	.33 (.45)	-.04 (.03)	-.02 (-.10)	.12 (.01)	.13 (.00)
USB Ach.					.02 (-.19)	-.20 (-.22)	-.09 (-.27)	-.01 (.04)	-.17 (.11)	-.24 (.07)	-.08 (.09)	-.14 (.16)
USB Aff.					.17 (-.02)	.00 (-.18)	.02 (-.03)	.18 (-.14)	-.17 (-.16)	-.08 (.15)	-.09 (-.04)	-.11 (-.02)
USB Rec.					.18 (-.07)	.02 (-.25)	.15 (-.18)	-.02 (-.07)	-.13 (.10)	.00 (.24)	-.10 (-.12)	-.13 (.06)
USB Con.					.27 (-.14)	.18 (-.36)	.24 (-.39)	.30 (-.21)	-.13 (-.11)	.00 (.08)	.01 (-.08)	-.03 (-.06)
SITUATIONS												
Ach.									.14 (.14)	.23 (-.09)	.13 (.29)	.15 (.44)
Aff.									.25 (.25)	.39 (-.03)	.22 (.21)	.16 (.36)
Rec.									.16 (.20)	.20 (-.04)	.23 (.11)	.17 (.32)
Con.									.13 (.14)	.12 (-.10)	.20 (.09)	.30 (.20)

*Sample 1, N = 77, $r_{.05}$ = .22. Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

Table 5.20

Correlation Between Original Teacher Preference Schedule (TPS) Needs and USB, Situations, and Objectives Tests

TEACHER PREFERENCE SCHEDULE	USB				Situations				Objectives			
	Ach.	Aff.	Rec.	Con.	Ach.	Aff.	Rec.	Con.	Ach.	Aff.	Rec.	Con.
Practical	-.08 (.20)	.14 (-.11)	-.06 (-.08)	.13 (-.04)	.23 (.22)	.06 (.24)	.24 (.19)	.30 (.37)	.02 (.27)	-.12 (.11)	.06 (-.01)	-.01 (.11)
Status	.00 (.12)	-.16 (.13)	-.08 (-.22)	-.10 (-.04)	-.01 (-.41)	.19 (-.24)	.02 (-.30)	-.11 (-.32)	.06 (.08)	.13 (.14)	-.06 (.30)	-.13 (.01)
Nurturant	-.13 (.17)	-.24 (.00)	-.13 (-.17)	-.11 (.02)	-.08 (-.21)	.27 (.03)	.07 (-.19)	-.12 (-.25)	.21 (.00)	.35 (-.05)	.01 (.20)	.02 (.05)
Non-Directive	.08 (.14)	-.08 (.17)	-.16 (.14)	-.35 (.01)	-.07 (.05)	-.01 (.19)	-.07 (.03)	-.16 (-.12)	.11 (.08)	.04 (.14)	-.13 (.17)	-.15 (.32)
Rebellious	.02 (-.16)	.01 (-.20)	-.03 (-.21)	.03 (-.09)	.08 (-.39)	.12 (-.22)	.04 (-.22)	.01 (-.21)	-.06 (.05)	.05 (.09)	-.22 (-.08)	-.18 (.-10)
Pre-Adult Fixated	.08 (.04)	-.04 (-.01)	-.07 (-.04)	-.23 (-.09)	-.20 (-.04)	.13 (.06)	-.03 (-.06)	-.14 (-.18)	.00 (.06)	.05 (.10)	-.02 (.29)	-.16 (.15)
Orderliness	-.16 (.06)	.02 (.12)	.09 (-.28)	.13 (-.11)	.14 (-.02)	.19 (.12)	.26 (.11)	.22 (-.02)	.08 (.15)	.12 (.15)	.17 (.46)	.21 (.22)
Dependency	-.07 (.01)	-.08 (-.01)	-.06 (-.13)	.03 (-.11)	.07 (-.19)	.17 (.02)	.09 (-.08)	.06 (-.13)	-.01 (.16)	.04 (.20)	.01 (.22)	-.03 (.18)
Exhibitionism	.13 (.20)	.04 (.03)	.08 (-.10)	-.22 (-.13)	-.02 (-.03)	-.01 (.05)	.09 (.01)	-.01 (.05)	.09 (.19)	.03 (.20)	.13 (.57)	.02 (.44)
Dominance	.01 (.27)	.18 (.18)	.12 (.03)	.22 (-.09)	.21 (.07)	.08 (.17)	.31 (.30)	.39 (.37)	-.01 (.17)	-.03 (.10)	.07 (.03)	.09 (.17)

* Sample 1, N = 77, $r_{.05}$ = .22. Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31

For Control, the correspondence between the Situations measure and the Teacher Preference Schedule and Objectives measures are consistent over both groups. These results pertain to the unadjusted scores. When the scores are adjusted for the tendency to score high across all needs (applies to all but USB), the results are essentially the same, the correspondence increases in some instances and decreases in others.

With respect to the ten original Teacher Preference Schedule measures, the correlations with the other predictors are in general low (Table 5.20). The scores which are consistent across both samples are between (1) the Practical score and USB Achievement score, Situations Recognition score, and Situations Control score and (2) between the Dominance score and Situations Recognition score and Control score and (3) between the Orderliness score and the Objectives Control scores; all of which are within expectations.

The correlations of Self-Ratings (Sample 2 only) and the other predictors are generally low. There are very few significant correlations with USB, Situations, Objectives or Van Pitt and these do not fit a systematic or logical pattern; hence they are not reported. The correlations of Self-Ratings with Teacher Preference Schedule scores are reported in Table 5.21, since they suggest meaningful relationships between the two sets of measures. Only the Achievement, Affiliation, Recognition, and Control need scores of the Teacher Preference Schedule are presented in Table 5.21. The correlations with the original 10 TPS scales do not add any useful information.

Table 5.21

Correlations Between Self-Rating and Teacher Preference Schedule (TPS)

		Self-Ratings (Unadjusted)				Self-Ratings (Adjusted)			
		Ach.	Aff.	Rec.	Con.	Ach.	Aff.	Rec.	Con.
TPS	Ach.	.34	.39	.45	.00	.03	.09	.28	-.27
	Aff.	.36	.56	.29	-.16	.14	.34	.09	-.46
	Rec.	.55	.58	.57	.20	.07	.05	.20	-.19
	Con.	-.16	-.24	.01	-.01	-.08	-.17	.17	.09

* Sample 2, N = 41, $r_{.05} = .31$.

The differences between adjusted and unadjusted scores are difficult to interpret since one does not know whether the intercorrelations among the scales reflect "true relationships" or merely response bias. In both adjusted and unadjusted scores there is a substantial relationship between Self-rating Affiliation and Teacher Preference Schedule Affiliation scores and a negative relationship (of questionable magnitude) between Self-rating Control score and Teacher Preference Schedule Affiliation score. Teacher Preference Schedule Control scores appear to be unrelated to the Self-ratings.

4. Relationships Between Predictors and Criteria

a. General Relationships. The primary result of the analysis of predictor-criterion relationship is the finding that the criterion measures of controlling behavior are consistently and quite highly related to the appropriate scales of the Teacher Preference Schedule. The most impressive relationships are between the Control measures on Teacher Preference Schedule and the Behavior Rating for Control [.51 and (.30)] and the Teacher Statements Control [.34 and (.29)]. In view of the negative relationship between Control Rating and Affiliation Rating, a negative relationship between Control on the Teacher Preference Schedule and Affiliation Rating would be expected and does in fact occur.

This negative relationship between observed Control and Affiliation was also evident in the criterion measures. The relationship between Control on the Teacher Preference Schedule and the factor scores is consistent with the preceding results in that both Factors 1 (warm, permissive) and 3 (confident), which are correlated one with the other, correlate significantly and negatively as expected with Control on the Teacher Preference Schedule. To summarize, the Control score on the Teacher Preference Schedule appears to be a good predictor of the principle dimension of teacher behavior which emerges from our study, i.e. warm, permissive vs. cold, controlling. One should perhaps, emphasize again at this point that this dimension results from classroom observation measures. The best conclusion is that the Teacher Preference Schedule Control score predicts controlling behavior on the part of the teacher and that, as viewed by the researchers, controlling behavior is highly related to lack of warmth and to a lesser degree to lack of confidence on the part of the teacher.

Table 5.22 presents the data discussed above as well as additional relationships between Teacher Preference Schedule scores and criteria.

In general these relationships support the above discussion in that the Teacher Preference Schedule measures are related as expected to criterion measures. Those significant correlations which are as expected are underlined. Thus, the Affiliation and Nurturance scores on the Teacher Preference Schedule correlate positively, as expected, with Affiliation Rating. They do not, however, correlate as expected with the Teacher Statements Affiliation scores.

Table 5.22

Relationships Between Teacher Preference Schedule (TPS) and Criteria including Factor Scores (F_1, F_2, etc.), Teacher Statements (T.S.) and Ratings (Rat.) *

	F_1	F_2	F_3	F_4	F_5	T.S. Ach.	T.S. Aff.	T.S. Con.	T.S. Man.	Rat. Ach.	Rat. Aff.	Rat. Rec.	Rat. Con.	Grade Taught
TPS Achievement	-.19 (.26)	.00 (-.18)	-.02 (-.25)	-.20 (.34)	-.12 (.34)	.15 (-.01)	-.08 (.40)	.11 (-.01)	-.16 (-.12)	.19 (-.36)	-.18 (.31)	.06 (-.01)	.18 (-.25)	.14 (-.09)
TPS Affiliation	.12 (.30)	.24 (-.01)	-.03 (-.11)	-.02 (.42)	.18 (.35)	.10 (-.19)	-.07 (.04)	.02 (.05)	-.12 (.07)	-.12 (-.36)	.25 (.30)	.34 (-.20)	-.17 (-.34)	-.16 (-.47)
TPS Recognition	.04 (.20)	-.05 (-.15)	-.03 (-.01)	.15 (.32)	.03 (.22)	.22 (-.04)	-.10 (.12)	.15 (.09)	-.38 (.05)	-.08 (-.21)	.22 (.39)	.09 (-.20)	.07 (-.23)	-.01 (-.42)
TPS Control	-.48 (-.47)	-.23 (.14)	-.33 (-.24)	-.08 (-.44)	-.18 (-.01)	.06 (-.18)	-.16 (.00)	.34 (.29)	-.17 (.01)	.15 (.08)	-.38 (-.39)	.03 (-.11)	.51 (.30)	.07 (.20)
TPS Practical	-.07 (-.39)	-.28 (-.04)	-.10 (-.03)	.09 (-.03)	-.20 (-.39)	.15 (-.19)	-.22 (.01)	.03 (.38)	-.20 (-.04)	.22 (.12)	-.28 (-.22)	.04 (.16)	.18 (.24)	-.07 (.01)
TPS Status	-.07 (.25)	.21 (-.04)	.00 (-.05)	.01 (.27)	.07 (.30)	.25 (.04)	-.06 (.21)	.12 (-.22)	.25 (.10)	-.11 (-.20)	.23 (.31)	-.03 (-.28)	.00 (-.34)	.03 (-.28)
TPS Nurturant	.09 (.30)	.39 (-.00)	.03 (-.02)	.04 (.48)	.18 (.35)	.17 (-.12)	.11 (.07)	-.16 (-.13)	.02 (.11)	-.27 (-.32)	.33 (.20)	-.04 (-.19)	-.10 (-.28)	-.12 (-.37)
TPS Non-directive	.37 (.34)	.17 (.04)	.22 (.00)	.00 (.51)	.16 (.14)	-.02 (.09)	-.02 (.06)	-.15 (-.23)	-.02 (-.08)	.00 (-.17)	.29 (.42)	-.02 (-.12)	-.39 (-.29)	.08 (-.35)
TPS Rebellious	.03 (.40)	.16 (-.07)	.25 (.01)	.13 (.19)	.13 (.23)	.04 (.15)	-.04 (.52)	.07 (-.35)	.00 (.07)	-.14 (-.40)	.03 (.43)	-.05 (-.09)	-.03 (-.42)	-.15 (-.20)
TPS Pre-Adult Fixated	.17 (.24)	.07 (-.14)	-.06 (-.05)	-.04 (.44)	.25 (.31)	-.03 (-.28)	.02 (.03)	-.06 (.20)	.02 (.06)	-.17 (-.29)	.28 (.18)	.23 (-.07)	-.16 (-.28)	-.27 (-.48)
TPS Orderliness	-.33 (-.15)	-.04 (-.13)	-.23 (-.39)	-.14 (.01)	-.14 (.30)	.10 (-.24)	-.19 (.08)	.24 (.29)	-.13 (.06)	.11 (-.25)	-.31 (-.01)	-.02 (-.19)	.37 (-.06)	-.02 (-.29)
TPS Dependency	-.00 (.09)	.02 (-.08)	.01 (-.13)	.06 (.31)	-.05 (.23)	.05 (.05)	.01 (.12)	.16 (.00)	-.14 (-.08)	-.02 (-.22)	.16 (.31)	-.03 (-.16)	-.03 (-.23)	-.07 (-.38)
TPS Exhibitionistic	.09 (.15)	-.04 (-.12)	-.15 (-.04)	.04 (.38)	.15 (.24)	.00 (.15)	-.01 (.24)	-.08 (-.13)	-.18 (.07)	-.04 (-.25)	.14 (.32)	.13 (-.01)	.07 (-.15)	.03 (-.28)
TPS Dominance	-.43 (-.31)	-.21 (.07)	-.33 (-.23)	-.07 (-.12)	-.16 (.00)	.01 (.15)	-.10 (.03)	.33 (.30)	-.18 (.01)	.13 (-.03)	-.31 (-.08)	.13 (-.11)	.43 (.07)	.07 (.00)

* Sample 1, N = 77, $r_{.05}$ = .22. Sample 2 (in parentheses), N = 41, $r_{.05}$ = .31.

With respect to the remaining measures of teacher behavior: Achievement orientation (Rating, Factor and Verbal Statements) Recognition (Rating and Factor) and Teacher Statements Management, few of the Preference Schedule measures relate significantly to them nor does a meaningful pattern emerge. There are no consistent predictors either for Teacher Statements Achievement scores or for Recognition (Factor and Rating) or for Teacher Statements Management scores. It is important to note that correlations which were expected to be low and non-significant, in general, are in accord with expectation.

One rather unusual result should be noted. In Sample 2 the Rebellious scale is the best general criterion predictor, showing high correlations with Factor 1, Teacher Statements Affiliation and Control scores and Ratings for Affiliation, Control and Achievement. These correlations were all low in Sample 1. The correlations of the Rebellious scale in Sample 2 Teacher Statements Affiliation score is particularly surprising since most other predictors show very low relationships.

It should be noted that the achievement dimension appears much more predictable for Sample 2 than for Sample 1. Whereas there is no systematic pattern of relationships in Sample 1, in Sample 2 both the Teacher Preference Schedule Achievement and Affiliation scores are related to the Achievement Factor 5 and to Achievement ratings. The correlation between Teacher Preference Schedule Achievement and Affiliation scores for Sample 2 (.48) is consistent with the direction of the other correlations. Finally, correlations of other variables with Teacher Preference Schedule Achievement scores are as expected.

It is also of interest that Factor 4 (little time spent alone) is correlated, as would be expected, with Teacher Preference Schedule Affiliation in Sample 2. It is also correlated with Teacher Preference Achievement and Recognition scores and, negatively, with the Control score. The former two correlations are expected since there exists substantial correlations among Teacher Preference Schedule scores for this sample. The relationship with Control cannot be explained on this basis but is consistent with expectation. Since these results obtain only for Sample 2, they are merely suggestive.

With regard to the remaining predictor devices given to both samples (USB, Reactions to Situations, and Educational Objectives), the general finding is the absence of a pattern of significant and logically consistent relationships. Thus the USB Affiliation, Recognition, and Control measures are not significantly related to any criterion measures. The USB Achievement measure is correlated significantly with Achievement Ratings (.24) but not with the Factor 4 score or Teacher Statements Achievement score. The correlations between the sub-scales of the Reactions to Situations and Educational Objectives devices are shown in Table 5.23. In addition to the correlations based on original scores on these measures, Table 5.24 shows the correlations based on scores adjusted for general response tendency for Sample 1 only. The findings portrayed are typical of the matrix of all these correlations with criterion measures. The adjustment has, in general, very slight effect.

On certain of the measures the adjustment increases the correlation with a given criterion and on others it decreases the correlation. The one exception occurs with respect to the Affiliation score on both the Reaction to Situations and the Educational Objectives Test wherein the adjustment increases the correlations with appropriate criterion measures. Since the adjustment in score has so little effect, it was not made for the Sample 2 analyses.

Table 5.23

Relationships between USB scores, Reaction to Situations scores (Sit.) and Educational Objectives scores (Obj.) on the one Hand and Criterion scores on the Other. Criterion scores include Factors (F_1, F_2, etc.), Teacher Statements scores (T.S.), and Ratings (Rat.). *

	F_1	F_2	F_3	F_4	F_5	T.S. Ach.	T.S. Aff.	T.S. Con.	T.S. Man.	Rat. Ach.	Rat. Aff.	Rat. Con.	Rat. Rec.	Grade Taught
USB Achievement	-.02	-.16	-.02	.10	-.10	.10	-.22	.03	-.12	.24	-.01	.03	.13	.06
	(.11)	(.01)	(.24)	(.17)	(-.08)	(-.07)	(-.07)	(-.04)	(-.03)	(.12)	(.22)	(-.11)	(.02)	(-.04)
USB Affiliation	-.03	-.10	.00	.11	-.02	-.07	-.15	.08	.02	.00	.07	.03	.05	-.09
	(.06)	(.20)	(.11)	(-.11)	(.13)	(-.09)	(-.11)	(.03)	(.11)	(.25)	(-.07)	(-.08)	(-.23)	(-.16)
USB Recognition	.05	.01	.00	.07	-.02	-.06	.06	.01	.14	-.04	.08	.13	-.20	.01
	(.09)	(.16)	(.47)	(.01)	(-.13)	(-.24)	(-.32)	(-.05)	(.12)	(.15)	(.03)	(-.19)	(.09)	(.13)
USB Control	-.08	.01	-.12	-.11	-.05	-.01	.01	-.09	.19	-.07	.04	-.03	-.26	-.11
	(.01)	(.29)	(.36)	(-.27)	(-.06)	(-.31)	(-.24)	(.01)	(.16)	(-.01)	(-.10)	(-.14)	(-.15)	(-.08)
Situation Achievement	-.01	-.10	.25	.12	-.13	.23	-.10	.01	-.21	.06	-.02	.06	-.26	.06
	(-.06)	(-.09)	(-.05)	(.03)	(-.22)	(-.08)	(-.03)	(.30)	(-.10)	(.16)	(-.04)	(.21)	(.26)	(-.12)
Situation Affiliation	-.06	.10	.08	.13	-.03	.19	.02	-.06	-.18	-.17	.12	.02	-.27	-.19
	(.03)	(-.18)	(-.10)	(.17)	(-.13)	(.04)	(.13)	(.22)	(-.08)	(.03)	(.16)	(.03)	(.19)	(-.07)
Situation Recognition	-.06	-.04	-.01	.09	-.05	.28	-.17	.06	-.31	-.09	-.04	.02	-.32	-.06
	(-.04)	(-.14)	(-.13)	(-.02)	(-.11)	(.04)	(.15)	(.22)	(-.14)	(.09)	(.02)	(.17)	(.31)	(.05)
Situation Control	-.03	-.22	.08	.01	-.19	.14	-.09	.03	-.16	.05	-.01	.04	-.05	-.15
	(-.21)	(-.07)	(-.01)	(-.11)	(-.22)	(-.06)	(.11)	(.08)	(-.04)	(.05)	(-.06)	(.23)	(.27)	(.05)
Objective Achievement	.02	.03	.07	-.03	-.15	.09	-.07	.04	-.11	.12	-.06	.01	-.04	.21
	(-.14)	(.01)	(-.06)	(.02)	(-.28)	(-.09)	(.14)	(.19)	(-.08)	(.02)	(.09)	(.12)	(.09)	(-.10)
Objective Affiliation	.03	.06	.09	-.04	-.06	-.02	.09	.11	-.05	-.06	-.04	.06	-.05	.11
	(-.06)	(.04)	(-.04)	(-.07)	(-.12)	(-.06)	(-.01)	(.20)	(-.09)	(-.08)	(.18)	(-.03)	(-.16)	(-.28)
Objective Recognition	-.04	-.11	-.03	-.04	-.15	.07	-.09	.07	-.16	.24	-.17	.09	.12	.05
	(-.02)	(-.07)	(-.13)	(.14)	(.18)	(-.13)	(.01)	(.04)	(.01)	(-.14)	(.02)	(-.09)	(-.01)	(-.19)
Objective Control	.00	-.09	.06	-.05	-.15	.02	-.05	.07	-.06	.18	-.18	.21	.06	.10
	(-.01)	(-.12)	(-.13)	(.16)	(-.08)	(.02)	(.04)	(.02)	(-.16)	(.03)	(.18)	(.06)	(.02)	(-.26)

* Sample 1, N = 77, $r_{.05}$ = .22. Sample 2, (in parentheses), N = 41, $r_{.05}$ = .31.

Table 5.24

Correlations between Criterion measures of Factor scores (F_1, F_2, etc.), Teacher Statement scores (T.S.) and Ratings (Rat.) with Adjusted Scores of Predictors which include Teacher Preference Schedule (TPS), Educational Objectives (Obj.) and Reactions to Situations (Sit.). All Scores of Predictors are Adjusted Scores. *

	F_1	F_2	F_3	F_4	F_5	T.S. Ach.	T.S. Aff.	T.S. Con.	T.S. Man.	Rat. Ach.	Rat. Aff.	Rat. Con.
TPS Achievement	-.04	.05	.12	-.19	-.11	.03	.02	-.06	.06	.19	-.15	.00
TPS Affiliation	.33	.31	.11	.03	.26	-.07	.04	-.17	.14	-.20	.35	-.42
TPS Recognition	.34	-.03	.17	.26	.10	.04	.03	-.07	-.13	-.18	.40	-.22
TPS Control	-.49	-.27	-.33	-.06	-.22	.03	-.12	.32	-.07	.17	-.46	.52
Objective Achievement	.06	.08	.06	.02	-.05	.07	-.07	-.09	-.01	.02	.13	-.16
Objective Affiliation	.06	.08	.06	.02	-.05	-.08	.20	.04	.05	-.22	.10	-.04
Objective Recognition	.07	.11	.11	-.01	.06	.01	-.07	.01	-.09	.12	-.02	-.08
Objective Control	-.02	-.09	-.13	.04	.04	-.07	-.02	.01	.05	.10	-.06	.14
Situation Achievement	.05	-.02	.13	-.03	.01	-.12	-.01	.02	.16	.22	-.12	.05
Situation Affiliation	.03	.26	.01	.05	.14	-.08	.23	-.16	.12	-.21	.22	-.10
Situation Recognition	-.08	.02	-.20	.05	.05	.25	-.22	.12	-.30	-.13	-.11	.00
Situation Control	-.02	-.25	.00	-.08	-.16	-.01	-.03	.05	-.05	.08	-.03	.05

* Sample 1, N = 77, $r_{.05}$ = .22.

b. Self-Ratings. Correlations between self-ratings (Sample 2 only) and criterion measures are shown in Table 5.25. The achievement and recognition measures show little of interest. The affiliation measure, however, appears to offer real promise, not so much as a measure of affiliation behavior but because of its relationship to achievement oriented behavior in the teacher. The evidence is not as clear-cut as one could wish since the teacher statement measure is not related to it; however, the correlations with achievement ratings and the Q-sort factor are substantial.

Table 5.25

Correlation between Self-Ratings, Factor scores (F_1, F_2, etc.), Teacher Statements scores (T.S.), and Ratings (Rat.). *

	F_1	F_2	F_3	F_4	F_5	T.S. Ach.	T.S. Aff.	T.S. Con.	T.S. Man.	Rat. Ach.	Rat. Aff.	Rat. Rec.	Rat. Con.
Self-Rating Achievement	-.06* .15	.21* -.11	-.03* .03		-.12* -.01	-.20* .11	.05* .20	.15* -.10	.06* -.18	.10* -.04	.06* .29	-.23* -.15	-.02* -.09
Self-Rating Affiliation	.14* .31	-.12* -.28	-.23* -.15		.42* .38	-.18* .07	.00* .19	.22* -.01	.08* -.14	-.42* -.41	.16* .42	.01* -.10	-.29* -.32
Self-Rating Recognition	.02* .15	-.02* -.18	-.21* -.07		.23* .18	.18* .27	.16* .24	-.26* -.27	-.12* -.27	-.03* -.11	.01* .22	-.02* -.07	.05* -.02
Self-Rating Control	-.10* .05	.02* -.12	.35* .33		-.48* -.34	.16* .24	-.06* .06	-.18* -.24	.00* -.13	.40* .22	-.16* .07	.09* .06	.24* .11

*These scores are adjusted for response bias as indicated in Chapter 3.

Sample 2, N = 41, $r_{.05} = .31$.

It will be recalled that the Teacher Preference Schedule Affiliation score also predicted Achievement (Factor and Rating) for this sample and that the Affiliation scores on these two instruments were substantially correlated. Hence these results are consistent within this sample. The Affiliation rating also appears related to the affiliation-control dimension but the latter is better predicted by Teacher Preference Schedule Control and (for Sample 2 only) by the Teacher Preference Schedule Rebellious score. The self-rating for Control also appears to predict--not controlling behavior but rather achievement behavior and, perhaps, ego strength.

c. The Van Pit Series-Wishes. The Van Pit Series-Wishes Test, used only with Sample 2, consists of eight scales and the device was keyed for an additional scale (Control) on a priori grounds. The normal scoring procedure yields a dichotomous score (indicating the presence or absence of the need) so a new scoring procedure was developed which results in a continuous variable for each scale. Correlations involving both of these scores on each scale were computed with the remaining variables, but in the case of the dichotomous variables, these were point biserial rather than Pearson product moment correlations. The interpretation of these data was further complicated by the fact that the experimenters had no real expectations concerning the relationships with many of the scales. For instance, it was not anticipated that scales such as "Need to be Free From Fear" would be related to any of the four needs of primary interest in the present research. Furthermore, even where there was in fact some expectation of relationship--such as, scores on the Control scale with other measures of control--these correlations were embodied in a matrix containing a large number of zero and chance correlations. The result of this was that the number of significant correlations did not greatly exceed the number of significant correlations that would be expected by chance. The most sensible solution to a problem of this sort is to eliminate the scales that are not contributing to the prediction of the criteria, so each of the scales were first examined in relationship to the Q-sort scores. If the scores derived from a scale of the Van Pit test are statistically independent of the scores on the 24 Q-sort dimensions, one would expect, that the mean correlation would be zero and that the variance of the correlations would be equal to the variance of a chance distribution. In accordance with this view, instead of examining each correlation individually, an F test can be used for an over-all test of the significance of the correlations for each scale. Since the correlations are, by hypothesis, deviations from a parameter of zero, the variance for the numerator in the F- test is calculated as the sum of r^2 divided by the number of correlations, and the denominator is the square of the standard error of r, or 1/(N-1).

Applying this analysis to both scoring systems in the case of each of the Van Pit scales, the variance of the point biserial correlations was significant at the .01 level of confidence for the Need for Economic Security scale, and the variance of the Pearson product moment correlations was significant at the .01 level of confidence for the Control scale, and at the .05 level of confidence for the Need for Economic Security scale. It may be that several of the others that approached significance were hampered by an excessively large proportion of error variance resulting from the introduction of too many correlations with unrelated variables, but in any event, only the latter two scales were considered for further analysis at this time.

The Need for Economic Security scale presents a fairly consistent picture across the other predictor variables. The correlations are .31 with the Non-directive scale, .30 with the Pre-adult Fixated scale, .24 with the Affiliation scale, and -.28 with the Control scale of the Teacher Preference Schedule. The scale correlates -.36 with the Van Pit Control scores, .31 with Self-ratings of Achievement, .20 with Reactions to Situations Achievement, and .40 with the USB Need Achievement scores. Again, it should be pointed out that these relationships are only suggestive. There was no cross-validation for the Van Pit since it was included only in Sample 2, and the standard error of a biserial correlation based on 41 cases is .16.

The Control scale scored as a continuous variable correlates -.22 with the Non-directive scale, -.21 with the Exhibitionistic scale, and .21 with the Control scale of the Teacher Preference Schedule. It also correlates -.21 with the USB Achievement scale, which is consistent with the correlation of -.36 with the Van Pit Need for Economic Security Scale.

The correlations between the Need for Economic Security scale and the Control scale and scores on the criterion variables are shown in Table 5.26.

Table 5.26

Correlations Between Selected Van Pit Scales and Criterion Variables *

	Need for Economic Security	Control
Factor 1 (Adaptable, Affiliative, Responsive)	.40	-.16
Factor 2 (Quiet, Controlled, Dull)	-.18	.38
Factor 3 (High Ego Strength, Confident)	.34	-.19
Factor 4 (Spends little time alone)	.38	-.29
Factor 5 (Not concerned with learning)	-.05	.32
Teacher Statement (Achievement)	.25	-.19
Teacher Statement (Affiliation)	.07	.02
Teacher Statement (Control)	-.21	.04
Teacher Statement (Management)	-.26	.09
Rating Achievement	.19	-.40
Rating Affiliation	.30	-.29
Rating Recognition	.01	-.06
Rating Control	.08	-.13

* Sample 2, N = 41, $r_{.05} = 0.31$.

The correlations involving the Need for Economic Security scale are consistent with the correlations with the other predictor variables. In both instances, the scale correlates with the affiliation and achievement dimensions. In addition to this it correlates .38 with Factor 3 (spends much time alone) and has a correlation of .49 with the Q-sort scores on Positive Orientation. The control scale, on the other hand, seems generally to be just the reverse of this. It comes in rather high on Factor 2 (.38)(quiet controlled, dull) and correlates -.40 with Ratings on Achievement. It is a little disturbing that Control should correlate negatively (although insignificantly) with Rating Control, but in light of the correlation with Factor 5 (.32) (not concerned with learning), and the correlation with Rating Achievement (.40) it is not surprising, since these variables correlate in the opposite direction with Rating Control. In short, the two variables, Need for Economic Security and Control, present the picture of a bipolar dimension, one end representing a vigorous, stimulating person that interacts considerably with his environment, the other, the Control end, characterized by the person that does not extend himself, but rather tends to be quiet and controlled and fails to engage enthusiastically in social pursuits. This interpretation, of course, is speculative since cross-validation of this portion of the study is lacking, and since the variables were selected on the basis of the significance of the variance of the correlations across the criterion variables.

5. Relationships Between Pupil Drawings and the Teacher Measures.

The samples were combined for these analyses giving a total of 95 classes covering mainly grades 1 through 4, but with a few self-contained fifth grades. Table 5.27 presents the significant correlations between the three drawing scores and the various teacher measures, both behavioral and paper-and-pencil. Out of a total of 42 correlations for each drawing measure, one would expect two to be significant at the .05 level by chance. This is the number significant for the achievement score; hence one can say little about these relationships. For the affiliation score, there are five significant correlations which seem with one exception to fit a fairly reasonably pattern. These correlations suggest that the teacher who is perceived as more distant and antagonistic by the pupil is one with high needs for Achievement, Exhibition, and Rebellion and who spends considerable time on management functions. The correlation with the composite criterion score for affiliation behavior is hard to explain since we would have expected the correlations to be negative.

There are six significant correlations with the Control score and these fit a reasonable pattern suggesting that the teacher who is perceived as controlling by the pupils is the one who exhibits much "achievement behavior" (Teacher Statements, Factor 5 and Composite Achievement) who is active and stimulating and whohas a high need for order. The correlation with dependency fits less well, suggesting that the more dependant teacher is seen as more controlling.

These relationships seem quite promising though the correlations are of modest magnitude.

Table 5.27

Significant Correlations Between Scores Derived from Pupil Drawings and Teacher Measures *

Teacher Measure	Drawing Scores ** Ach.	Aff.	Con.
Situations Recognition	.20		
Factor 1	-.22		
Teacher Preference Schedule Rebellious		.21	
Teacher Preference Schedule Exhibitionistic		.20	
Teacher Preference Schedule Achievement		.23	
Teacher Preference Schedule Management		.22	
Composite Affiliation (Rating = Teacher Statements)		.20	
Teacher Preference Schedule Orderliness			-.32
Teacher Statements Achievement			-.24
Factor 5 (Non-achievement)			.25
Composite Achievement (Rating = Teacher Statements)			-.33
Factor 2 (Dull)			.24
Teacher Preference Schedule Dependency			-.22

* N = 95, $r_{05} = .20$.

** Note: A high score on drawings control indicates little perceived control as scored. A high score on affiliation indicates the teacher is perceived as more distant and antagonistic by the pupils.

6. Relationship of Criterion and Predictor Measures to Grade Taught. A most peculiar result occurred with respect to the relationship of grade to predictors and criteria as shown in Tables 5.10, 5.22, and 5.23. In Sample 1 the correlations with criterion measures are significant and in some cases substantial while the correlations with predictors are low, suggesting that the nature of the teaching task influences the behavior of the teacher along these dimensions such that more control, more achievement and less affiliation behavior occur in the higher grades but that teacher personality has little relation to grade taught.

In Sample 2, however, the reverse obtains. The correlations between grade and teacher behavior are low whereas the correlations with some of the personality measures are substantial, notably those with the Teacher Preference Schedule Affiliation, and Recognition scores and to a lesser extent Control scores. This result would suggest that the teaching task has little effect on teacher behavior but that teachers tending toward high affiliation needs, low control needs gravitate toward the lower grades while the low affiliation, high control need teachers gravitate toward the higher grades. There is no way to resolve this paradox in the present study except to suggest that differences in the two school systems may be responsible.

The only relationships which are consistent across both samples are a negative correlation with Factor 4 indicating more time spent alone in the higher grades and a negative correlation with the Teacher Preference Schedule Pre-adult Fixated score indicating less "need for child-like activities" in the teacher in the higher grades.

For Sample 2 only, there are no more than the chance number of significant correlations between grade taught and the Van Pit scales. There are, however, substantial negative correlations between grade taught and Self-Ratings on Achievement (-.49) and Affiliation (-.51). The latter is to be expected since other instruments have shown a decrease in Affiliation characteristics with increasing grade level. The correlation with Achievement need scores is not easily understood but it is consistent with the correlation between Self-Ratings on Achievement and Affiliation needs.

CHAPTER VI

PREDICTION OF TEACHER BEHAVIOR FROM A PATTERN ANALYSIS OF THEIR NEEDS

An important point to note concerning the prediction of the classroom behavior of teachers is that classroom situations provide numerous cues capable of arousing several needs simultaneously. This fact may complicate considerably the prediction problem since the effect of single needs may be determined by the presence of other needs. Under these conditions two main approaches to prediction are possible. These may be described as follows:

1. The hypothesis may be made that the amount of teacher behavior related to the satisfaction of a given need is related to the strength of that need. This follows the typical paradigm used in most prediction studies, and the paradigm used in the predictions already reported in the previous chapters of this report.

2. An alternative hypothesis is that the amount of behavior emitted related to a particular need depends, not only on the absolute strength of the need but also on the relative strength of that need with respect to other needs. Thus, according to this hypothesis, a teacher with a high achievement need might show little behavior related to this need if the teacher were characterized by an even stronger need for affiliation. This hypothesis assumes that the relative strength of needs determines the behaviors that are manifested in addition to their absolute strength. In other words, the hypothesis assumes that the pattern of needs may have to be taken to account in making predictions.

Pattern analysis procedure lends itself logically to the prediction of complex behavior based upon need theory. In a situation as complex as that of the classroom it is probable that needs interact in various ways in determining behavior. Even with regard to the physiological needs one can see common examples of this interdependence. A moderately hungry man may take a snack provided his thirst drive is satiated or moderately low, but if his need for water is greater than his need for food he is more likely to avoid eating behavior and indulge in drinking behavior. By analogy, in predicting the classroom behavior of a teacher one might expect the pattern of his needs to predict his classroom behavior at least as well, and perhaps better, than the absolute strength of the single needs.

The problem investigated here was to determine whether a pattern analysis of need scores would improve prediction over predictions made only from independent sets of scores.

Research on Pattern Analysis

The literature on pattern analysis is concerned with two major problems; the configural scoring of the items of a test, and the quantification of profiles of total scores or subtest scores. Although the two approaches involve some different problems, they are both attempts to improve prediction of a criterion by using information other than the conventional additive total score. As Gaier and Lee (1953), have pointed out in their review of this area, "Evidence is being offered that higher validites may be obtained if predictive variables are treated as patterns rather than as mere 'and-summations' or averages of separate and independent scores" (p. 140). As early as 1937, Zubin suggested that the use of total scores in personality adjustment inventories may actually conceal useful predictive information. Osgood and Suci (1952) were concerned with the possibility that both the shape of a profile and its elevation are interdependent, and consequently they developed a score based upon both profile information and the absolute magnitude of the scores.

A difficult problem in the use of item configurations or profiles for predictive purposes is the quantification of meaningful patterns. Lubin and Osburn (1957) dealt with the problem of determining the item configurations with the highest predictive validity for a particular criterion. They point out that pattern scores as predictors will probably only be useful with a small number of items, a large number of subjects, and when there are good theoretical grounds for believing that a non-linear relationship exists.

Pattern analytic methodshave been applied to measures of achievement, ability, and personality with some success. Forehand and McQuitty (1959), compared the prediction of educational achievement using both patterns of factor scores and traditional multiple regression procedures. In the initial analysis, the prediction based on the configural score was superior to the multiple correlation, however, upon cross validation the correlations between the configural score and the academic achievement criterion dropped substantially below those for the conventional multiple regression prediction. This finding seems to be typical.

In the area of personality measurement one application of profile analysis is to compare the profiles of normal groups with groups diagnosed as neurotic or psychotic. Gough (1946), reported that the MMPI profiles of groups with differing degrees of neurosis and psychosis differed rather consistently from the profiles of normals. The former tended to have generally more erratic profiles even though the overall height of the profiles went up with the severity of the illness. The practice of comparing an individuals' profile on a personality inventory with a normative profile is very common.

Methods

For the purposes of the pattern analysis both the Salt Lake and Davis County samples of teachers were combined providing a total sample of 118 teachers. The two samples were consolidated to obtain a population large enough to select groups with extremely different patterns of needs. In view of the results of the predictions already obtained with the various predictors of the study, it was decided that only two predictors would be used in the pattern analysis; the USB and the Teacher Preference Schedule. Limiting the number of predictors was also necessary due to the very time consuming task of selecting extreme pattern groups and assigning pattern scores to the subjects.

Prior to the selection of pattern groups the raw scores on the USB and the Teacher Preference Schedule were converted to z-scores. Since the distributions of the raw scores were already approximately normal, it was not necessary to normalize.

The data provided two profiles of three need scores for each subject; one for the USB and one for the Teacher Preference Schedule. Need pattern groups were selected separately from the USB profiles, and then from the Teacher Preference Schedule profiles. In order for a teacher to be selected for a particular need pattern group one of her need scores had to fall at least one standard deviation above or below her two other need scores, regardless of the absolute height of her profile. In this way a high and low need group was obtained for each need on each of the two measures. The high group for a particular need consisted of subjects whose scores on that need fell at least one standard deviation above the other two needs; the low group consisted of subjects whose scores on that need fell at least one standard deviation below the other needs. The number of subjects which met this criterion for at least one need ranged from 9 to 17 out of the total of 118 subjects. The means of these groups on the classroom behavior measures were then compared, and t-tests computed.

One of the problems with a pattern analysis is that extremely large samples are necessary in order to obtain large enough groups which meet the criterion for a particular pattern. In order to boost the sample size so that the total sample of 118 teachers could be used, a pattern score was developed which could be assigned to every subject. A correlational analysis was then used and this permitted a direct comparison of the pattern predictions with the predictions using independent scores. The procedure for assigning the pattern scores was essentially the same as the procedure for differentiating the pattern groups, except that instead of a simple dichotomy of high and low patterns, a six point scale was used and a pattern score was assigned for each need depending upon the extent to which a need score differed from the other two need scores. The pattern scores were assigned as follows:

0 - where the need in question was at least 1.7 S.D. below each of the other two needs.

1 - where the need in question was at least 1.0 S.D. below each of the other two needs but did not meet the criterion for a score of 0.

2 - where the need in question was at least 0.3 S.D. below each of the other two needs but did not meet the criteria for a score of 0 or 1.

3 - where the need in question did not differ from each of the other two needs by more than .3 S.D. in either direction (above or below).

4 - where the need in question was at least .3 S.D. above each of the other two needs but did not meet the criteria for a score of 5 or 6.

5 - where the need in question was at least 1.0 S.D. above each of the other two needs but did not meet the criterion for a score of 6.

6 - where the need in question was at least 1.7 S.D. above each of the other two needs.

Results

Both the t-test and correlational analyses indicated that the Teacher Preference Schedule was a better predictor of classroom behavior than the USB. When the USB need pattern groups were compared on the various criteria, only two t-tests were significant at the .05 level of confidence, and five at the .10 level using two tailed tests of significance. The high achievement group of teachers spent less time working alone (significant at the .05 level), and made more statements which were classified as achievement oriented (significant at the .10 level) than the low need achievement group. When the high and low affiliation need pattern groups on the USB were compared the only t-test which approached significance was for the control category of the verbal statements and this was not in the expected direction. The high affiliation group made more controlling statements (significant at the .10 level). The high control group scored higher on Factor 2, quiet, controlled, and dull (significant at the .05 level), spent more time working alone (significant at the .10 level), and was rated as less achievement motivated (significant at the .10 level) than the low control group. Since the majority of these t-tests are of questionable significance, and since many expected relationships did not occur, little can be said for the USB as a predictor of the classroom behavior of teachers.

The results obtained with the Teacher Preference Schedule, however, were more favorable. The results of comparing extreme patterns are shown in Table 6.01. When the high and low need pattern groups were compared on the various behavioral measures a number of significant differences were obtained for the affiliation and control variables. No consistent predictions were obtained with the achievement scale, although several approached the 5 percent level of significance. The analysis presented in Table 6.01 shows that the high affiliation pattern group on the Teacher Preference Schedule was more warm and permissive, more quiet, controlled, and dull, less concerned with achievement, and was rated more kindly, more affiliative, and less controlling than the low affiliation pattern group. Most of the differences were in the opposite direction for the comparisons between the high and low control pattern groups. The high control group was less warm and permissive, gave fewer statements classified as affiliative, was rated as less kindly, less affiliative, and more controlling than the low control group. These comparisons indicated that the control and affiliation patterns are negatively correlated. The Teacher Preference Schedule pattern scores for affiliation and control correlated -.39, the affiliation and control ratings -.50, and the affiliation and control verbal statements -.25.

Table 6.01

Mean Criterion Scores and t-tests for High and Low Need Pattern Groups on the Teacher Preference Schedule ***

Measures of Classroom Behavior	Teacher Preference Schedule Low Ach.	High Ach.	t	Low Aff.	High Aff.	t	Low Con.	High Con.	t
Factors:									
1. Warm, permissive	17.75	23.25	1.57	20.06	28.65	2.59*	28.24	17.35	4.12**
2. Quiet, controlled, dull	17.08	17.17		15.00	21.12	4.03**	19.76	18.18	
3. High ego strength, not frustrated, confident	10.42	10.17		10.94	13.12	1.61	13.59	10.53	1.96
4. Spends little time working alone	4.00	4.00		3.71	4.65	1.71	4.35	3.24	1.82
5. Not concerned with learning or achievement	12.25	16.67	1.99	13.12	17.65	2.92**	15.59	13.35	1.29
Teacher Statements:									
Achievement	33.42	40.50	1.61	41.65	39.76		35.65	38.47	
Affiliation	1.58	3.67	1.99	2.88	1.82	1.26	2.35	1.06	2.19*
Control	28.00	21.42	1.90	26.41	21.41	1.66	21.71	26.29	1.64
Management	22.50	19.92		19.53	22.82	1.38	24.29	22.76	
Ratings:									
Kindly	7.92	8.42		8.12	11.06	3.06**	10.94	7.88	3.73**
Stimulating	8.33	8.25		9.59	8.65	1.21	8.76	7.82	1.00
Achievement	9.92	9.33		9.82	8.53	1.84	9.94	10.41	
Affiliation	6.58	7.42		6.35	8.71	2.91**	8.82	5.71	4.04**
Control	10.17	8.75	1.37	10.12	6.94	3.66**	7.53	10.59	3.87**
df			22			32			32

* Significant at the .05 level.
** Significant at the .01 level.
*** t-tests less the 1.00 were omitted from the table.

The correlational analysis of the Teacher Preference Schedule pattern and conventional scores yielded results quite similar to the comparisons of pattern groups. As can be seen in Table 6.02 the pattern and conventional scores of achievement motivation again failed to predict the behavioral measures, although several approached significance. The affiliation scale correlated positively with the kindly and affiliative ratings and negatively with control, while the control scale correlated positively with the behavioral measures of control and negatively with affiliation.

A comparison of the correlations in Table 6.02 also shows that the pattern score gave no great improvement to the predictions. The correlations increased slightly when the pattern score was used for predicting affiliative behavior, however, the conventional (non-pattern) score actually predicted slightly better for the control variables.

The extent to which the need pattern scores could improve prediction was limited by the high correlations between the pattern scores and the original need scores. The pattern scores and the original need scores correlated .61, .65, and .72 for the Teacher Preference Schedule achievement, affiliation, and control scores respectively. In order to determine whether the need pattern scores were contributing anything unique to the predictions of classroom behavior beyond that being contributed by the independently derived conventional scores, partial correlations were computed between the Teacher Preference Schedule affiliation and control pattern scores and the classroom behavior measures holding the original scores constant. The correlations are reported to Table 6.03 for the behavioral measures with which some relationships were expected. The partial correlations indicate that the pattern score added nothing to the predictions based upon the Teacher Preference Schedule control score, but that the pattern score did make a unique contribution to the predictions based upon the Teacher Preference Schedule affiliation scale. The correlations are admittedly quite small, but never-the-less, the finding is an interesting one.

Table 6.02

Correlations Between the Teacher Preference Schedule and Pattern Need Scores and the Teacher Classroom Behavior Measures *

Measures of Classroom Behavior	Teacher Preference Schedule					
	Achievement		Affiliation		Control	
	Conventional Score	Pattern Score	Conventional Score	Pattern Score	Conventional Score	Pattern Score
Factors:						
1. Warm, permissive	-.03	.09	.17	.25	-.46	-.36
2. Quiet, controlled, dull	-.06	-.01	.14	.28	-.14	-.10
3. High ego strength, not frustrated, confident	-.10	.01	-.06	.10	-.30	-.18
4. Spends little time working alone	.00	.05	.15	.13	-.18	-.19
5. Not concerned with learning or achievement	.05	.04	.24	.21	-.13	-.15
Teacher Statements:						
Achievement	.09	.05	-.04	-.07	.03	.03
Affiliation	.06	.05	.03	-.01	-.12	-.14
Control	.06	-.12	.04	-.13	.32	.17
Management	-.13	-.03	-.02	.10	-.14	-.08
Ratings:						
Kindly	-.00	.04	.20	.24	-.37	-.34
Stimulating	-.05	.03	-.08	-.01	-.15	-.07
Achievement	-.03	-.02	-.20	-.18	.10	.14
Affiliation	.03	.05	.28	.26	-.39	-.38
Control	.03	-.08	-.23	-.36	.45	.35

* N = 118, $r_{.05} = .18$

Table 6.03

Partial Correlations Between the Teacher Preference Schedule Affiliation and Control Pattern Scores and the Criterion Variables with the Conventional Score Held Constant *

Measures of Classroom Behavior	Teacher Preference Schedule	
	Affiliation	Control
Factors:		
1. Warm, permissive	.19	-.05
2. Quiet, controlled, dull	.25	.00
3. High ego strength, not frustrated, confident	.18	.06
4. Spends little time working alone	.04	-.09
5. Not concerned with learning or achievement	.07	-.09
Teacher Statements:		
Control	-.21	-.09
Rating:		
Kindly	.15	-.11
Achievement	-.07	.10
Affiliation	.11	-.16
Control	-.28	.05

$* N = 118, r_{.05} = .18$

Partial correlations were also computed between the Teacher Preference Schedule conventional scores and the criterion measures holding the pattern score constant. These correlations were computed because the correlations in Table 6.02 tended to indicate that the conventional score provided superior predictions of the criterion measures for the Teacher Preference Schedule control scale. These correlations are shown in Table 6.04 and tend to support the conclusion that the conventional score for control provided superior predictions of the criteria These findings suggest that behavior related to the satisfaction of affiliation need may depend upon the pattern of an individual's needs, while behavior related to control need occurs regardless of the strength of other needs.

Odd-even, split half reliability coefficients were computed for the affiliation and control scales of the Teacher Preference Schedule using the Spearman-Brown formula. Although the Teacher Preference Schedule affiliation and control scales contain only 15 and 19 items respectively, the obtained reliabilities were .64 for affiliation and .80 for control using the total N of 118 teachers.

Table 6.04

Partial Correlations Between the Teacher Preference Schedule Affiliation and Control Conventional Scores and the Criterion Variables with the Pattern Score Held Constant *

Measures of Classroom Behavior	Teacher Preference Schedule Affiliation	Teacher Preference Schedule Control
Factors:		
1. Warm, permissive	.01	-.31
2. Quiet, controlled, dull	-.06	-.10
3. High ego strength, not frustrated, confident	-.16	-.25
4. Spends little time working alone	.09	-.06
5. Not concerned with learning or achievement	.14	-.03
Teacher Statements:		
Control	.16	.29
Rating:		
Kindly	.05	-.20
Achievement	-.11	.00
Affiliation	.15	-.19
Control	.00	.31

* $N = 118$, $r_{.05} = .18$

Discussion

Pattern analysis versus prediction from independently derived need scores. The results indicate that no great general advantage is provided in the situation studied by the use of the need pattern score which was derived to predict the classroom behavior of teachers. Generally, the independent need score predicted as well as the pattern score with the possible exception of the Teacher Preference Schedule affiliation scale. The above conclusion, however, should be qualified in several respects. First, the pattern scores and the original scores were highly correlated and this placed a definite limitation on any improvements in prediction which could be expected from the pattern score. Secondly, despite these high correlations between the two scores there is a tentative indication that the Teacher Preference Schedule affiliation pattern score did make a slight, but unique, contribution to the prediction of teacher behavior. This finding also suggests that the need to control may determine behavior independently of other needs, while the occurrance of affiliative behavior may depend upon both the absolute strength of the affiliation need, and its strength relative to the other needs in an individuals' profile. For the purposes of predicting the behavior related to some needs, a multiple prediction utilizing information concerning both the absolute strength and the relative strength of the need may produce the best prediction.

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

I. Summary

1. Purpose. The general purpose of the research project was to discover variables underlying the classroom behavior of teachers. The more specific purposes were to discover the relationship between measures of the needs of teachers and related categories of teacher behavior in the classroom. The research was prompted by the fact that recent research on needs conducted by McClelland, Atkinson, French, and others had demonstrated that projective instruments designed for the measurement of need could be used for making predictions of behavior under controlled laboratory situations. This research was designed in order to determine whether similar devices could be used for predicting the classroom behavior of teachers under naturally occurring conditions. If such predictions were possible, then the foundation would be laid for the development of a theory of teacher behavior which might have value for planning teacher training.

2. Procedure. The first stage of the project involved the development of a set of instruments designed to measure achievement, affiliation, and status need. Early experience with these instruments led to the conclusion that recognition need could not be considered an aspect of achievement motivation and that it should be measured separately. The result of this decision was that most of the instruments used in the study provided scores purporting to measure four needs.

The following instruments were designed to predict teacher behavior or were available for use in the study:

a. The Utah Study of Behavior (USB) was developed as a projective instrument designed to measure teacher needs. Specifically, the instrument was built to measure four needs referred to as achievement, affiliation, recognition, and control. The instrument was patterned after one previously developed by E. G. French (1956) and utilized a similar scoring system. An additional scoring system based on ratings of responses was also used.

b. The Test of Personal Preference for Educational Objectives is an instrument built to measure the needs of teachers by determining the educational objectives which they endorse.

c. The Test of Reactions to Educational Situations is an instrument designed to measure teacher needs by asking subjects to evaluate the responses of teachers to various situations that arise in relation to pupils in the classroom.

d. The Teacher Preference Schedule is a device developed by Stern and Masling (1958) and built around the concept that teacher needs are important determinants of teacher behavior in the classroom. The device was rescored in order to provide measures which appeared to be more directly related to the four needs which form the focus of this study.

e. The Van Pitt Series Wishes Test is a device designed to measure a series of needs which are referred to as need for belongingness, for achievement, for economic security, for freedom from fear, for love and affection, and for meaning and direction in life. In addition, a scale for measuring need for control was added. A disadvantage to the device, as it has been designed, is that it classifies persons on an all-or-none basis as either having the need or not having the need. For this reason a scoring system was devised which distributed scores over a scale on each one of these needs.

f. A Self Rating Scale was developed which called for self ratings with respect to thirty characteristics.

g. A Questionnaire was developed for the purpose of probing the background of the individual with respect to experiences he may have had and events to which he may have been exposed which might be related to the presence of the needs under investigation. Since early results with this questionnaire were very unpromising, little use was made of it in the later stages of the research.

The following devices were designed for appraising and recording teacher behavior in the classroom:

a. A Teacher Statements technique was adapted from one already developed by Withall (1949). This technique involves the systematic sampling of the verbal behavior of the teacher. The statements of the teacher, thus collected, are later classified into categories from which are derived scores indicating the extent to which the teacher is achievement oriented, shows affiliation and controlling behavior, and the extent to which she occupies herself with management activities. Altogether 100 statements were collected from each teacher which involved a time sample of at least two hours and at least four observation periods. The statements were collected by two independent observers each of whom made at least two separate visits to the classroom.

b. A Rating Scale was developed for recording the observers' assessment of thirty-five characteristics of the behavior of the teacher in the classroom.

While some data were collected concerning the various instruments prior to the administration of the entire battery of measuring devices to a group of teachers in service, the main body of data for which results are reported is derived from two groups of female elementary school teachers located in two different school districts. One group, referred to as Sample 1, consisted of 77 teachers in a metropolitan school district. The other group, referred to as Sample 2, consisted of 41 teachers in a large diffuse school district which served many small towns as well as rural areas. The procedure for collecting the data was as follows:

1. Schools were contacted first through the district office which arranged for members of the research staff to contact principals of selected schools. The general nature of the project was described to principals who then arranged for a project scientist either to address a small group of the faculty or the entire faculty concerning the nature of the project. At this meeting the teachers were told that the project was to study differences in styles of teaching and that help was needed in order to conduct the study. The scientist then left the room and the teachers were free to discuss whether they would cooperate. Excellent cooperation was obtained.

2. Brief visits were first made to each classroom in the grades of kindergarten through the sixth. As the scientists came to know the teachers and were accepted in the school, longer visits were made and data were collected. After all classroom data had been collected, each teacher was contacted independently for the purpose of arranging a time when a kit containing the various test instruments could be delivered and explained to the teacher. The test kit remained with the teacher and was picked up at a later data when the teacher had completed all the instruments.

Scores were derived from the various instruments and the relationships between the variables computed on an IBM 709 computer at the Western Data Processing Center, University of California, Los Angeles. These relationships were computed separately for the two samples of teachers in most cases.

3. Results. The analyses of the data presented in the previous chapter included a minimum of discussion. In this chapter, the major findings of the research will be presented and then followed by a discussion of their implications both for further research and for current educational practice. The major findings are as follows:

a. Findings with respect to the criterion variables.

(1) The teachers were rated with respect to 35 characteristics which included the four needs described as achievement, affiliation, recognition and control. Of particular interest among the correlations between these ratings is the negative correlation between the control and affiliation dimensions. Controlling teachers appeared to the observers to be cold and aloof with respect to the children. Another interesting fact is the negative correlation between the affiliation rating and the achievement rating. The teacher who is seen as directing her energies to achievement activities is not seen as one concerned with developing a personal relationship with the children.

(2) Q-sorts were made on the teachers with respect to 24 dimensions and these were subjected to a principle axis factor analysis. The factors were rotated by a method developed by Kaiser (1958). For all practical purposes five factors of any strength were found. These may be described as follows:

Factor 1, Warm permissive--Cold, controlling.
Factor 2, Quiet controlled, dull--Stimulating, active.
Factor 3, High ego strength--Low ego strength.
Factor 4, Spends much time alone--Little time alone.
Factor 5, Little concern with academic achievement--Much concern.

The factor structure which emerged from this rotation is very similar to that which has appeared in other studies and notably that in the study of Ryans (1960). The structure is also interesting in that it yields variables which have been considered by educators to bear an important relationship to school learning.

Although orthogonality was maintained in the rotation of the factorial axes, the factor scores derived show rather high interrelations which vary somewhat from one sample to the other.

(3) The teacher statements were classified into a number of categories and provided scores related to achievement orientation, affiliation orientation, control orientation, and classroom management. These scores showed a very substantial range. It is hardly surprising that with such excellent distributions of scores satisfactory reliabilities were found for the four measures. These reliabilities were estimated by means of an analysis of variance technique.

The teacher statement scores tend to be negatively intercorrelated. This tendency is a result of the way in which the scores are derived and does not necessarily represent the interrelationships among variables that would be found it statistically independent scores had been derived. The highest negative relationship is between the Achievement score and the Management score. This suggests that a teacher who devotes much time to management activities has little time for achievement oriented activities.

(4) Some consistency is found in the scores on the same variables when they are measured by different instruments. While consistency between ratings and factor scores are to be expected since they are based on the same general approach--observer ratings, consistency between the Teacher Statements measures and those based on ratings is encouraging since it indicates strong variables which permeate teaching behavior.

b. Findings with respect to predictor variables.

(1) The relationships among the scales on the Teacher Preference Schedule are somewhat different in the two samples of teachers studied. In the case of Sample 1, the relationships between scales are similar to those found by Stern and Masling(1958), but Sample 2 shows more striking deviations. However, in all samples, the scales can be roughly ordered from those relevant to the description of a "teacher centered" teacher to those relevant to the description of a "child centered" teacher. The scales of the four needs which were added to the instrument relate, as expected, to the other scales, except in the case of the Achievement need scale.

(2) The scales of the USB showed relatively high intercorrelations in the teacher samples as compared with those found with a sample of undergraduate students. An earlier sample which included teachers in graduate courses had also produced similar relatively high intercorrelations. The reasons for this are obscure. The most acceptable explanations are that the teachers may have a different motive structure than the undergraduates or that response sets are operating in the case of the teachers.

(3) Consistencies across the various measures of need are low and mostly of negligible proportions.

c. Findings with respect to the relationships between predictors and criteria.

(1) The primary finding with respect to the prediction of teacher behavior is that criterion measures of controlling behavior are quite consistently related to the Control measure derived from the Teacher Preference Schedule.

(2) A negative relationship occurred between measures of control and measures of affiliation both among the predictor and among the criterion variables. This leads one to the conclusion that a major dimension of teacher behavior is represented by a behavior which is cold and controlling at the one end and warm and permissive at the other. The Control measure of the Teacher Preference Schedule appears to be a fair predictor of that dimension.

(3) An odd finding is that the rebellious scale of Teacher Preference Schedule is the best criterion predictor for Sample 2. It is the impression of the research workers, however, that this score is mis-named and might better be called 'professional identification' since it is derived from items of the type: "Being outspoken in defense of teachers' rights." As such, the interpretations would be that, within a school system with a highly stable population of teachers, those most highly identified with teaching as a profession are least controlling.

(4) Other criterion dimensions such as the Achievement orientation and the Management dimension show no consistent relationship to the predictors. The USB scores showed no consistent and statistically significant set of relationships with the criterion measures. Some of the relationships are in accordance with expectation but they lack consistency across the different criterion measures which makes one suspect that the relationships are artifacts.

(5) The adjustment of scores designed to reduce the effect of certain response sets did not have the effect of increasing relationships with criterion variables.

(6) The relationship of the self rating of Affiliation to the Teacher Statements measure of achievement orientation is substantial and suggests that self ratings may prove to be valuable devices for predicting teacher behavior. The relationship is sufficient to suggest that the use of self ratings be further explored in this connection.

(7) Two scales on the Van Fit Series-Wishes device offer some promise as a predictor of teacher behavior. These are the scales entitled "Need for Economic Security" and "Need for Control." Both scales were rescored to provide a continuous rather than a dichotomized variable. The latter type of score for the Need for Economic Security scale correlated 0.40 with Factor 1 (adaptable, affiliative, responsive) and 0.38 with Factor 4 (spends little time alone). The Control scale correlates 0.38 with Factor 2 (quiet, controlled, dull) but failed to correlate with the Control variable on the Teacher Statements. The two variables together present the picture of being related to a bipolar dimension defined at the one end by a person who is vigorous and stimulating and who interacts with his environment and at the other by a person who is controlling and quiet and fails to engage enthusiastically in social interactions.

(8) The study of the pupil drawings suggests that they provide an important technique for exploring events in the classroom. The classes which provided drawings indicating perception of the teacher as distant and antagonistic tended to be those run by a teacher who spent much time on management and who, according to the Teacher Preference Schedule scored high on the scales named Achievement, Exhibitionism and Rebelliousness. Classes producing high control scores on the drawings tended to be those run by teachers who show much achievement oriented behavior and who are active and stimulating. The latter teachers on the Teacher Preference Schedule tend to show a high score on the Orderliness scale.

(9) Relationships between grade taught and the variables measured in this study do not show a consistent pattern of relationships across the two samples. There appears to be some tendency for those in the lower grades to show more Affiliation and less Achievement oriented behavior, a tendency particularly noticeable in Sample 2.

d. Comparison of Pattern Scores with Conventional Scores.

(1) The plan of the study had considered the possibility that conventional need scores might not predict teacher behavior as well as scores which took into account the overall pattern of need scores. Studies of the predictive value of pattern scores were undertaken through the use of two different procedures. In the first of these procedures cases were selected in which the score on a particular need was at least 1.5 standard deviations above either of the need scores. In this phase of the study the scores were limited to those which purported to measure achievement, affiliation, and control needs. The pattern analysis derived by the procedure just described proved in many ways unsatisfactory since it did not permit a comparison of the predictive value of the pattern scores with the predictive value of conventional scores. For this reason a second procedure was adopted which permitted such a comparison. In this latter procedure, pattern scores were determined for each teacher and such scores were then correlated with the criterion measures. These correlations could then be compared with the correlations derived from the conventional scores. The pattern scores in the case of the Teacher Preference Schedule were found to have predictive value in the case of the control

need and the Affiliation need measures. In the case of the control need the pattern scores predicted the criterion measures slightly less well than did the conventional scores. In contrast, in the case of Affiliation need the pattern scores provided predictions slightly better than those derived from conventional scores. Partial correlation coefficients indicated that the pattern scores made a unique contribution to the prediction other than that made by the conventional scores in the case of affiliation and that the conventional scores made a contribution to prediction other than that made by the pattern scores in the case of control.

II. DISCUSSION

1. Some Problems Concerning the Use of Projective Devices For Predicting Behavior. The history of projective techniques reveals an inconsistency between the results of one study and the results of another. The early research workers who attempted to establish the predictive value of the Rorschach were plagued by the apparent lack of reproducibility of what appeared to be many promising studies. Those who have worked with the instruments which have emerged from the work of Murray and McClelland have been faced with similar problems. The latter type of instrument seems to be most successful in predicting behavior in a laboratory situation but, even in the laboratory, consistency of prediction has not always been the rule. The modest successes achieved with these devices in predicting characteristics of behavior in controlled laboratory situations have been impressive compared with the failure of such devices to predict behavior in naturally occurring situations. The possible reasons for this failure are worth considering since they may serve as a guide to future research work concerned with the problem of predicting teacher behavior.

First, there is the fact that situations in which instruments similar to the USB have been used for prediction purposes have been ones in which the cues related to motive arousal have been under the control of the experimenter. In addition, the best success has been achieved with instruments which have been administered also under conditions which permit some control over the cues present while the instrument was being taken. From a theoretical standpoint prediction should be best when control is exercised over the motive aroused both in the testing situation and in the criterion situation. Such control cannot generally be exercised when projective devices are used for making predictions in naturally occurring situations. Certainly, in the present research, the practical impossibility of maintaining such control of both the testing and teaching conditions would reduce the possibility of making predictions. The fact may well be that unless such control is exercised prediction with devices such as the USB may not be possible.

This point may be made in a slightly different way. If one desires to predict typical performance of a person under stimulus conditions which are familiar to him, the best prediction may very well result from tests which ask him, ineffect, how he behaves in such situations. Such are the findings of the present study and they are similar to results appearing elsewhere in the literature.

The contribution of more subtle devices such as projective techniques, which attempt to assess dynamic as opposed to behavioral variables should be toward the prediction of behavior under stimulus conditions which are novel to the person. The development of so called dynamic psychology revolves on the premise that individuals having differing need structure may exhibit similar behavior and that individuals with similar need structure may show very different behavior. The value of need assessment, then is primarily in predicting behavior under novel conditions wherein well established behaviors are less likely to occur. It may be noted that laboratory studies wherein projective measures have the most predictive success meet the criterion of novelty to a much greater extent than classroom situations as studied in this project.

Second, there is the possibility that persons who take projective tests in situations other than the laboratory or where they suspect that the test is given for reasons other than academic ones, may manifest response sets which seriously detract from the significance of the scores. In the present research, evidence indicated that the responses of teachers to the USB were different from those of students to whom it was administered as part of a general class requirement. While the scores of the student population showed that the four scales had a high degree of independence, the scores of the teachers showed ahigh degree of relationship among the scales. Several explanations may be suggested for this phenomenon. One is that the teachers may differ from the students by representing a population in which there are relatively highly correlated needs. Another is that the teachers may differ one from another in a variable which might be described as imagery fluency. Thus some teachers may obtain low scores on this device because they fail to respond as profusely to any of the cues provided by the items while others may respond profusely to all of the items.

The problems raised here are persistent problems in the use of projective devices and are not unique to this study. While most measuring instruments can be used in situations other than those in which they have been demonstrated to have validity, this generalization does not apply to projective devices because of their extreme sensitivity to testing conditions.

2. Pupils' Perceptions of the Classroom and Teacher. The writers believe that the drawing technique used in this research offers considerable promise as an approach to the study of the pupil's perception of the classroom situation. The initial study by Froerer (1960) gave considerable support to the hypothesis that the drawings did represent inner reactions of the pupils to the teaching situation and encouraged further exploration of the technique. A major inference from the data collected was that the perceptions of the pupils differ considerably from those of adult visitors to the classrooms. Many have long suspected that this was so but have not had data to support the contention.

The significant features of the drawings are undoubtedly masked by certain factors which tend to make the drawings uniform. The directions for the drawing task are such that they probably encourage the production of a stereotyped product showing children and desks in rows and a teacher standing before the class. Such is the type of drawing most frequently produced though some drawings show marked deviations from this stereotype. Within the stereotype there is limited scope for the pupil to project his own affective responses and perceptions of the classroom.

Further research using a drawing technique in order to study pupil responses to the classroom might attempt to use directions which present such stereotypes from occurring. One suggested set of directions might be to "draw a picture of you and your teacher working together," or "draw a picture showing what happens in your class." Many other variations in the procedure could be suggested and the effect of these directions on the drawings could be profitably explored. A further extension of the use of the drawing technique might be to interview some of the pupils concerning the meaning of their drawings.

Another suggestion that has been made is to assemble a series of drawings which differ considerably in the classroom organization which they present and the feeling tone which they convey and to ask pupils to judge them in terms of whether their class is or is not like the one in the picture. Such a technique would not only facilitate the scoring of the drawings but might also provide a superior method of assessing the pupil's perception of the classroom situation.

Other techniques in this area should also be given consideration. The staff of the project considered the adaptation of the Semantic Differential as a means of evaluating pupil responses to the classroom. Only lack of time prevented the exploration of the use of this technique. It has many advantages to recommend it. It requires little time for administration. It is fairly easily explained to those who are to take it. It offers some degree of disguise concerning the goals that it is designed to achieve. The responses can also be rapidly classified into meaningful categories. With all of these advantages, research workers should feel encouraged to use the device for the purposes under consideration.

3. Concerning the Failure of Measures of Achievement Motivation to Predict. Perhaps the most significant negative finding is that the measures of achievement motivation failed to predict teacher behavior in the classroom. This was, at first, surprising since the projective measure of achievement motivation had been shown to predict not only in experimental situations but also in life situations such as are involved in obtaining grades in college. Achievement motivation represents the single area in the Murray-McClelland type of approach which has yielded consistent predictions of behavior in naturally occurring situations. Thus, currently available knowledge indicated that aspects of teacher behavior related to this motive might be predictable from measures thereof. The fact that this did not turn out to be the case requires some comment.

First, despite the fact that teachers manifest much achievement oriented behavior, little of this is related to the achievement of a standard of excellence. In the original scheme for the classification of teacher statements, one of the proposed categories was for statements in which the teacher urged the pupil to achieve a standard of excellence. However, of the many thousands of statements collected only one was found to fall into this category. The category was dropped from use. The conclusion is that those behaviors of teachers which are achievement oriented have little to do with the striving to reach a standard of excellence which is the central concept involved in achievement motivation.

Second, achievement oriented behavior on the part of the teacher would appear to emerge as a result of pressures from two sources. On the one hand there are the immediate requirements of the teaching situation. The teacher is expected to emphasize learning and pressure in this respect comes from the principal, the parents, the community, and the children themselves. No teacher can be immune to such pressures and perhaps those who yield to them most are those who conform to social pressures rather than those who have high achievement needs.

Local pressures result in achievement oriented behavior but another source of such behavior is teacher training. In such training substantial emphasis is placed on the organization of subject matter, curriculum design, and the role of the teacher in helping the pupil to master content. One result of such training is behavior of the teacher in the classroom related to the mastery of content. Once again, such behavior on the part of the teacher need not reflect achievement need but may well reflect the effects of teacher training. Such factors as these would tend to reduce the variability of achievement behavior among teachers, perhaps to the point where differential prediction becomes unfeasible.

4. Some Problems Concerning the Classroom Variables. The research raises certain problems concerning the measures of teacher behavior the recognition of which should influence future studies of such phenomena. While the Withall procedure, and certain procedures of interaction analysis growing out of it, show great promise, there are certain features of these techniques which require modification. An unfortunate defect of the procedure is that the scores derived from it are not independent of one another. The scores derived are such that the total must add up to 100 which means that a particularly high score on one variable results in a low score on another. The consequence of this is that many of the variables tend to be negatively correlated one with another and simple procedures cannot be used to cluster the scores into empirically derived variables. To some extent the negative relationship may not be an artifact for a teacher who engages extensively in one class of behavior has little time left to engage in other classes of behavior.

The most obvious solution to this would seem to be to collect a series of independent samples of teacher behavior each of which would be scored for one of the categories of teacher behavior but only if it were clearly so scoreable. Scores should be in such terms as frequency per hour rather than in terms of the sampling system used here. This would result in an independence of each category score from every other by increasing the number of degrees of freedom involved. The main disadvantage of this procedure is that it is very tedious and would require far more time in the classroom than was spent in the present study.

Certain categories of teacher behavior are not measured satisfactorily by the Withall technique. The impression of the observers was that affiliation related behavior did not appear to any great extent in the verbal behaviors of the teacher and surprise was felt that this variable emerged so well in the reliability studies. The failure of the Withall measure of affiliative behavior of teachers to be correlated with related measures (ratings and factors) although the latter were related among themselves confirmed the observer evaluations of this measure. The writers suggest that future research workers concentrate on measures of affiliative behavior of teachers other than those derived from records of teacher statements. This aspect of teacher-pupil relationships is probably manifested to a greater extent in such behaviors as a smile of encouragement, a nod of the head, a friendly pat on the back, a positive suggestion concerning work to be done rather than a reprimand, a brief conference with the pupil in a low inaudible voice, and so forth. Such activities are not recorded or do not show their real significance in the records of the verbal behavior of teachers that were made in this study. If affiliative behavior is to be measured in future studies then the research workers should give serious consideration to recording related categories of non-verbal behavior.

An interesting and puzzling phenomenon is presented by the fact that measures of achievement and affiliation motivation tend to be correlated positively among predictor measures and negatively among criterion measures. The latter negative correlation variables are not just the consequence of the fact that the Teacher Statements measures tend to be negatively correlated because of the way in which they are constructed. The negative correlation between Achievement and Affiliation measures persists when measures derived from ratings are used. There is also a negative correlation of -.45 between the Achievement Rating and Teacher Statements Affiliation, although the correlation between the Affiliation Rating and the Teacher Statements Achievement score is 0.00. These correlations are in marked contrast with the persistent positive correlations of similar magnitude which are found between measures of Achievement motivation and Affiliation motivation among the predictor variables. This discrepancy in the relationship among variables could be given a number of explanations. The most plausable is that the predictor variables are seriously contaminated with a response set variable which tends to generate a positive correlation. The fact that achievement orientated behavior tends to be correlated negatively with affiliation oriented behavior on the part of the teacher in the classroom suggests that there may be difficulties in training a teacher who is both achievement oriented and who is also warm, outgoing, and responsive in her personal relations with pupils.

5. Implications for Teacher Education. Studies of the determinants of teacher behavior find ultimate application in teacher education. The training of teachers must remain on a speculative basis until knowledge is available concerning the ways in which teacher behavior can

be influenced by prior conditions including college courses. A major finding of the present study is that a motive described as a need to control plays a central role in determining the behavior of the teacher in the classroom. This is a finding believed to be of considerable significance to teacher education since there is a prevalent view among professors of education that excessive controlling behavior on the part of the teacher is much more likely to impede than to facilitate learning in the classroom. While the teachers in Sample 1 of the present study devoted a median of 9 percent of their verbal behavior to controlling statements, there were teachers who devoted as much as 44 percent of their verbal behavior to the pursuit of such a purpose.

Whether teachers can be trained to avoid behavior of the persistent controlling type is questionable. Controlling behavior may reflect a well-established and early-ingrained trend in the personality and one that is not likely to be modified by training, let alone training which is primarily academic in character. There are even questions whether teacher training should even be concerned with attempts to modify the personalities of prospective teachers, for such an endeavor has hardly met with high success even among such experts as clinical psychologists and psychiatrists.

A much more feasible way of preventing the occurrence of a high degree of controlling behavior on the part of teachers in schools would be to introduce selection procedures designed to eliminate from teacher training those who have a high level of control need. Procedures designed to do this are approaching the point where they may be applied in teacher education settings. Such procedures might have long-term effects on the schools of the country in addition to that of eliminating from the scene the high controlling teacher. Since administrators are drawn from the ranks of teachers, the long term effect might be to reduce the incidence of the highly controlling administrator, whom some would consider to be a source of considerable friction among school faculty.

The preceding remarks must be considered as pertaining to the opinion that high control, as observed in this study, is undesirable in the classroom, a proposition which has yet to be verified by research.

Some of the comments that have been made with respect to the unnecessary nature of much controlling behavior would apply also to the category which has been described as management behavior. Great individual differences exist in the extent to which teachers engage in management behavior. In the case of some teachers as little as 8 percent of their verbal behavior is devoted to management activities, but with others as much as 47 percent of their verbal behavior may fall into this category. Any management behavior over and above that required for the orderly conduct of learning would appear to represent wasted teacher effort and wasted class time.

Management skills may be presumed to represent trainable skills, and yet the diversity of the procedures adopted and the nature of much of the classroom management suggests that teacher training could do much to improve procedures for developing management skills. Perhaps teacher training suffers in this respect from the fact that students of education learn classroom management techniques from teachers in schools who are often, themselves, somewhat unsystematic in their own approach to these problems. The writers realize that the problem of the supervision of the student teacher involves many serious problems. They also realize that sound management practices are not really acquired by reading about them. The practice of these skills under conditions of supervision which provide adequate reinforcement and guidance seems essential. Adequate training procedures which incorporate the latter have not yet been evolved.

Another implication for teacher education comes from the fact that the category of teacher behavior which has been described as achievement oriented lacks items of behavior related to the achieving of a standard of excellence. There is almost no trace of any statements such as "Try and do your very best," or "You will have to do this many times in life so learn to do it well," or "Everyone try and do this assignment so that he is thoroughly proud of it." Such statements which imply that there are important values to be achieved through personal effort were almost entirely absent from our data.

These facts raise two questions. One is whether children are influenced by statements which imply that there is a standard of excellence worth achieving. A clear answer cannot be given to this question, but the little data available indicates that such statements would at least have the property of arousing achievement motivation even if they did not succeed in developing it. Frequent arousal of a motive may go far towards developing it.

A further question is whether teacher training can accomplish much in the direction of developing habits of speech and behavior on the part of the teacher related to the encouragement of pupils to strive for the achievement of a standard of excellence. Such speech habits are presumably to some extent dependent upon the existence in the teacher of an achievement motive if they are to be anything more than parrotted clichés. Nevertheless most teachers may be expected to have a sufficient degree of achievement motivation to provide a foundation for classroom behavior emphasizing the importance of striving for excellence. Teacher education does little in this respect. Often all that is done is to indicate that emphasis on grades or on inter-pupil competition has undesirable consequences and the matter is left at that. This may well leave many students of education with the impression that any reference to standards in the classroom should be avoided so that they enter teaching positions in schools ill-equipped to help the pupil strive to do his very best.

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APPENDIX 1

FORM A

THE UTAH STUDY OF BEHAVIOR

BY

NORMAN E. WALLEN AND ROBERT M. W. TRAVERS

WITH THE ASSISTANCE OF

HAROLD E. CHRISTENSEN	IAN E. REID
GARY Q. JORGENSEN	KENNETH H. WODTKE

Name________________________________ Date____________

Age____________ Sex____________

Adapted from "A Test of Insight" by E. French

This device was developed with the support of the
U.S. Office of Education and the University of Utah Research Fund.

DIRECTIONS:

This is a measure of your understanding of the reasons why people behave as they do. You will be given a characteristic behavior of each of a number of teachers. Your task is to explain why each teacher behaves as she does. Read each description and then decide what you think would usually be the reason why a woman does what this woman does. Decide what this woman is like, what she wants to have or do, and what the results of her behavior are apt to be *for her*. Write your explanation in the space in the booklet. If you think of more than one explanation give the *one* you think is best.

Remember — For each item you are to indicate:

1. What this woman is like
2. What she wants to have or do
3. What the results of her behavior are apt to be *for her*.

1. Elaine's friends can always count on her for a loan.

2. Sally is enrolled in night classes at the University while teaching school.

3. Betty makes many irrelevant but witty remarks whenever she is in a committee meeting.

4. Gail thinks that extra-curricular activities take up too much time.

5. Louise enjoys being a member of a large family.

6. Kathy volunteered to represent the "spirit of democracy" on a float in the local parade.

7. Francis opposes giving more power to the student government.

8. Barbara is frequently seen working on cross-word puzzles.

✓

9. Alice often dreams she is a WAC drill sergeant.

10. Janet knows nearly every student in her school by name.

11. Carol has many books on her shelf that she has never read.

12. Virginia says she hopes to do something really worthwhile someday.

13. Margaret is sometimes irritated when students interrupt to ask questions which sidetrack the issue she is trying to present.

14. Irene said "Won't you all please stop in and see me."

15. June gives more attention to her brightest students.

16. Karen has a very unusual way of signing her name.

17. Blanche insists on punishment of students who break even minor rules.

18. Ruth talks a great deal about the interesting projects she runs in her class.

19. Eileen would rather give advice than take it.

20. Marilyn can't say no to a salesman.

21. Phyllis was a good student in college but had a record of many withdrawals from courses.

22. Doris often tells the story of how she talked the principal into giving her a job.

23. If Charlotte were not a teacher, she would like to be a judge.

24. Joyce dislikes being alone, but never gets around to sharing an apartment.

25. Diane wishes she were more intelligent.

PLEASE TURN PAG

Affiliation Items Added to Form 2A

26. Elizabeth signed up for a course on how to get along with people.

27. Joan would like the children to call her by her first name.

28. Janice chose her close friend to appear with her on television.

FORM B

THE UTAH STUDY OF BEHAVIOR

BY

NORMAN E. WALLEN AND ROBERT M. W. TRAVERS

WITH THE ASSISTANCE OF

HAROLD E. CHRISTENSEN	IAN E. REID
GARY Q. JORGENSEN	KENNETH H. WODTKE

Name____________________________ Date______________

Age_____________ Sex_____________

Adapted from "A Test of Insight" by E. French

This device was developed with the support of the
U.S. Office of Education and the University of Utah Research Fund.

DIRECTIONS:

This is a measure of your understanding of the reasons why people behave as they do. You will be given a characteristic behavior of each of a number of teachers. Your task is to explain why each teacher behaves as she does. Read each description and then decide what you think would usually be the reason why a woman does what this woman does. Decide what this woman is like, what she wants to have or do, and what the results of her behavior are apt to be *for her*. Write your explanation in the space in the booklet. If you think of more than one explanation give the *one* you think is best.

Remember — For each item you are to indicate:

1. What this woman is like
2. What she wants to have or do
3. What the results of her behavior are apt to be *for her*.

1. Margaret prefers the small neighborhood grocery to a super market.

2. Instead of teaching, Barbara wishes she had gone to graduate school.

3. June never misses an opportunity to demonstrate her dancing skill.

4. Betty feels that students have more than enough summer vacation.

5. Helen says she went to college to make new friends.

6. If Karen were not a teacher, she would like to be a model.

7. Phyllis dislikes giving reasons for the rules she establishes in her classroom.

8. Marilyn will usually volunteer for a difficult task.

9. When in college, Joyce was enthusiastic in her hazing of freshmen.

10. Carol says the best indication of a teacher's worth is what the students think of her.

11. Even though she budgets her income quite carefully, Sally always buys the most expensive clothes.

12. Louise often dreams of swimming against the tide.

13. Gail is extremely annoyed if students speak out in class without first raising their hand.

14. When Kathy's guests leave, she takes thirty minutes to say goodbye.

15. Elaine keeps pictures of great scientists and s tatesmen on the walls of her classroom.

16. Alice always uses green ink in her pen.

17. Charlotte often reprimands children during play periods.

18. Doris is willing to give a lecture to any group on almost any topic.

19. Blanche enjoys assigning grades.

20. Janet said "They probably won't ask me to go with them."

21. Ruth often studies late.

22. Irene often writes letters to the editor in the daily newspaper.

23. Diane hopes she will be called for jury duty.

24. Eileen dislikes keeping her class after school.

25. Francis worried a lot about how she did on college examinations.

APPENDIX 2

Category Scoring System for the Utah Study of Behavior

A. *Description of Scoring Categories.* The scoring system is very similar to that used by French (1956) and corresponds closely with one previously developed by McClelland *et al.* (1953) which is described in great detail in a more recent publication of Atkinson (1958). The scoring procedure utilizes the following paradigm and the symbols indicated opposite each category:

1.	The need is present.	A
2.	Expectation of success of failure in attempt to attain the goal.	Ga
3.	Activity instrumental to the attainment of the goal.	I
4.	Characteristics of the individual which facilitate or hinder the attainment of the goal.	Q
5.	Characteristics of the environment which facilitate or hinder the attainment of the goal.	B
6.	The goal is or is not attained...	G
7.	The person experiences positive affect in goal attainment.	P
8.	The person experiences negative affect in goal failure.	N
9.	The person reacts to failure.	D

Each of the categories, with the exception of P, N, and D can be scored as + or -. Thus A+ indicates that the subject hopes to attain the goal and A- represents a fear that the need will not be satisfied. Ga+ indicates that the individual is expecting to attain his goal, and Ga- indicates that the person is expecting to fail.

While the notation was derived originally from the scoring of devices designed to measure achievement need ("A" stood for achievement) the same notation can be and is used for the scoring of other needs.

B. General Rules Pertaining to Scoring Categories.

1. The basic unit of response will be termed an utterance. Each utterance can be scored for only one category. An utterance is a word or a sequence of words conveying one, and only one, idea. Throughout the remainder of this section utterances used to exemplify specific scoring categories will be underlined.

   Example: (response partitioned into utterances)

   Stem: Barbara is frequently seen working on corss-word puzzles.
   Response: "Barbara is a genius / when it comes to working such puzzles. / She hasn't any athletic ability, / so to compensate for these other interests / she turns to puzzles / where she can excel."

2. Score a response in relation to its stem, but independently of others responses. A response which repeats the idea stated in the stem is not scored.

   Example: (repetitive response)

   Stem: Janet knows nearly every student in her school by name.
   Response: "Janet has a very good memory for names."

3. When an utterance can be scored for several categories, score the highest category in the learning paradigm. (e.g., A- rather than Ga-)

4. Any reference to a failure to gain a goal which results from the introduction of an additional motive of greater strength is not scored.

   Example:

   Stem: Blanche said, "They probably won't ask me to go with them."
   Response: "Blanche is a very insecure person and said this because she was not sure of her social position with the other teachers. Blanche will probably never be asked because she is always too busy with her schoolwork and other things which interest her."

C. Desire for Goal (A+ or A-).

1. Desire for goal (A+) is scored for any statement indicating the presence of the need. More specifically, it must be a statement of (1) desire for a goal, e.g., "wishes to learn," (2) the importance or necessity of the goal, e.g., "people are important to her," or (3) statements of enjoyment, e.g., "she likes to dominate people."

Example: (scored A+ for control)

Stem: Phyllis dislikes giving reasons for the rules she establishes in her classroom.
Response: "She likes to feel superior to her students, and feels she must dominate them. She doesn't really have reasons for the rules and resents having to give reasons."

2. Fear of failure (A-) should be clearly expressed rather than implied. The (A-) category does not include dislike, but must be fear of failure.

Example: (scored A- for control)

Stem: Alice insists on punishment of students who break even minor rules.
Response: "Alice is afraid that she will lose control of the class and lose some authority, if she doesn't make the students toe the mark."

3. Score A- such statements as, "I cannot associate fear of failure with her behavior..." because the respondant obviously is associating.

Example: (scored A- for achievement)

Stem: Francis worried a lot about how she did on college examinations.
Response: "Francis is a very conscientious person and worries about everything. I cannot associate her behavior to lack of self-confidence or thoughts of failure. I just believe that she is a high-strung, nervous, worrying, conscientious individual. It's for sure she would certainly apply herself in her school work."

4. Other examples of utterances scored for A+ or A- and utterances not scored for A+ or A-.

a. Achievement.

(scored for A+ but not A-)

Stem: Betty works hard in some classes, but not very hard in others.
Response: "Betty enjoys doing what she can do best. Those things she does not do well she dislikes doing. She becomes passive when a challenge is presented to her. She doesn't work well under pressure."

(scored for A+ but not A-)

Stem: Phyllis works much harder than most people.

Response: "Phyllis is compensating. She feels she must excel in whatever she does, so that her position in life will be secure."

(scored for both A+ and A-)

Stem: Francis worried a lot about how she did on college examinations.
Response: "This person enjoys striving to achieve. It is difficult for her to do so, therefore she worries that she might not. Parents might have expected too much from her throughout her life."

(scored for A-)

Stem: Phyllis was a good student in college but had a record of many withdrawals from courses.
Response: "Phyllis is afraid of doing poorly in anything. She lack self-confidence and if she thinks she will do poorly at the beginning of the course she drops out. She lack perseverance and gives up easily."

b. Affiliation

(scored for A-)

Stem: Dorothy has a nodding acquaintance with everyone in her neighborhood.
Response: "Dorothy does not project herself into others as she feels a general mistrust of all mankind. Perhaps she is afraid to become friendly with others for fear they will not like her."

(scored for A+)

Stem: Elaine's friends can always count on her for a loan.
Response: "She is a very friendly, congenial person. She wants to have people like her even though she might suffer financial loss. Rather than make and keep friends by her generosity she will no doubt alienate many of them."

(not scored either A+ or A-)

Stem: Dorothy has a nodding acquaintance with everyone in her neighborhood.
Response: "Dorothy is naturally gregarious. She has always found it easy to be friends with everyone. Unlike many people who don't even know who their neighbors are, she has made it a practice to smile and say hello as she meets her neighbors, and everyone is friendly in return."

Note: In responses such as the one above where there is no clear-cut scorable A+ or A-, other categories may be scored, and the presence of the need is inferred.

c. Recognition

(scored for A+)

Stem: Kathy volunteered to represent the "spirit of democracy" on a float in the local parade.
Response: "Kathy probably wants to gain some notoriety from it."

(scored for A-)

Stem: Ruth talks a great deal about the interesting projects she runs in her class.
Response: "She is afraid that someone else will get the credit for the projects, and talks about them to let everyone know they are hers'."

(not scored A+)

Stem: Kathy often writes letters to the editor of the daily newspaper.
Response: "Kathy has been dominated all her life and been in such a position that she couldn't express her resentment towards such domination. By writing the editor and taking issue with his editorials, she is thereby able to get even by telling him her opinions that could somehow never be expressed."

(not scored A-)

Stem: Diane is always tearing down her acquaintances.
Response: "Ridicules others for faults which she possesses but will not recognize in herself."

d. Control

(scored A+)

Stem: Francis opposes giving more power to the student government.
Response: "She is a strict disciplinarian and one who enjoys her authority. She is 'set' in her ways. She will be feared but not respected by her students. She will waste much time on discipline problems."

(scored A-)

Stem: Francis opposes giving more power to the student government.

Response: "She is a weak disciplinarian who is afraid of losing some of her own power to the student government."

(not scored A+)

Stem: If Charlotte were not a teacher, she would like to be a judge.
Response: "She feels unimportant, maybe even inferior. She is a competent person and has good judgment, and wants a job where she can help people solve their problems.

5. Occasionally a response occurs which contains more than one statement of the need or of fear of failure. In such a case a maximum of two (A) categories may be scored, e.g., either two (A+) categories, an (A+) and an (A-), or two (A-) categories.

Example: (score the A+ category twice)

Stem: Elaine's friends can always count on her for a loan.
Response: "She is an insecure person. She wants more secure social relationships. She wants to be liked and have more friends. She will be used by people, and be dissatisfied because of her lack of true lasting friendships.

D. Expectation of Goal Attainment or Failure (Ga+ or Ga-)

1. Goal expectation (Ga) and goal attainment (G) are discriminated by the tense used. (Ga) is scored when the goal attainment or failure to attain the goal is anticipated, e.g., is in the future tense.

2. Examples of responses scored and not scored for Ga+ or Ga-.

a. Achievement

(scored for Ga+)

Stem: Barbara is frequently seen working on cross-word puzzles.
Response: "She enjoys teaching but does not feel that it is a great challenge. She works these puzzles because they are challenging to her. She completes the puzzles and receives satisfaction from being able to do so."

Note: The utterance underlined above is scored (G+) rather than (Ga+).

(scored for Ga-)

Stem: Virginia says she hopes to do something really worthwhile someday.

Response: "Virginia fails to realize that her teaching, if done well, is really worthwhile. She wants an excuse for not trying to do her best each day. If she continues in this way, she will never achieve anything worthwhile.

(not scored for Ga-)

Stem: June gives more attention to her brightest students.
Response: "June was probably a bright student herself and gets satisfaction from seeing the brighter students move ahead more rapidly. If she continues to work only with the bright students, the poor students will soon grow to dislike her."

Note: The above utterance is not scored (Ga-) for achievement, since it anticipates failure to attain an affiliation goal.

b. Affiliation

(scored for Ga+)

Stem: Louise enjoys being a member of a large family.
Response: "I would say Louise probably likes people and enjoys sharing and participating with groups of people. I would say she wants to give of herself. The results will be favorable in that she will be well liked and be a happy person."

(scored for Ga-)

Stem: Elaine's friends can always count on her for a loan.
Response: "Elaine would have to be a generous, trusting person if she constantly lends money. She wants to have her friends like her. She may actually lose some of her friends if they do not repay her because they may be overly conscious of the indebtedness."

(not scored for either Ga+ or Ga-)

Stem: Irene said, "Won't you all please stop in and see me."
Response: "Irene is either a very insecure person or a very friendly person. Since she says 'me' I'll say she's insecure. I think she wants to have lots of friends and she wants very much to please them."

c. Recognition

(scored for Ga+)

Stem: Karen has a very unusual way of signing her name.

Response: "Karen is probably a normal average person who has acquired a knack for this particular thing. She wants people to notice her originality and cleverness. This will bring attention to her--some positive some negative."

Note: The above utterance is scored Ga+ even though the obtained attention could be "negative." Our conception of the need for recognition can include both fame and infamy.

(scored for Ga-)

Stem: Ruth talks a great deal about the interesting projects she runs in her class.
Response: "Ruth has an inferiority complex about what she is doing and her worth as a person. She wants others to know about her projects so that their compliments will build her self-confidence. The results may be a desire on the part of others to ignore her, and she will not get the compliments she desires."

(not scored for Ga+ or Ga-)

Stem: Kathy often writes letters to the editor in the daily newspaper.
Response: "Kathy likes to be noticed. She enjoys making a 'splash.' She enjoys making her thoughts and ideas known."

d. Control

(scored for Ga+)

Stem: Alice often dreams she is a WAC drill sergeant.
Response: "She likes to think of herself as a boss. She wants to have a position of authority. She will probably satisfy her desire to be a drill sergeant be being strict with the students."

(scored for Ga-)

Stem: Francis opposes giving more power to the student government.
Response: "Francis is probably a dictatorial person with a big ego. She wants to have the control of the students in her hands, and is not able to relinquish her authority to students. The students will soon become aware of her motives and give her such a hard time in class that she will lose control of them anyway."

(not scored for Ga+ or Ga-)

Stem: Blanche insists on punishment of students who break even minor rules.

Response: "Rather exacting of others and probably excuses her own shortcomings. She wants to feel that she is boss. The students will grow to dislike her."

Note: The above anticipated failure is for an affiliation goal. Any category which is related to a need other than the need which the item was designed to measure is not scored.

(scored for Ga+ but not Ga-)

Stem: Phyllis dislikes giving reasons for the rules she establishes in her classroom.

Response: "She cannot give authentic information as to whys and wherefores, but feels that she should be obeyed never-the-less because she is in charge. She is a very domineering individual. She wants people to conform to what she thinks and does. As a result, students may conform in class (scored Ga+) but rebel outside of class."

Note: The last utterance in the above response is not scored Ga- since Phyllis' needs are presumably not affected by such behavior.

E. Activity Instrumental to the Attainment of the Goal (I+ or activity Instrumental to avoiding Failure (I-).

1. Instrumental activity will be scored only for activity specifically expressed in a response which is more than just a repetition of the stem. A pattern of inactivity which leads to goal attainment or failure is also scored (I). Behavior of other people is not scored for (I). Unlike the (A+) or (A-) categories which can be scored twice, the other categories are not given such prominence. The positive and negative categories for (Ga), (I), (Q), and (G) may both be scored in the same response, but two (Ga+) or (I+) categories are not scored. If a whole series of activities are listed which are instrumental to goal attainment, they are only scored for one (I+).

2. Instrumental activity (I) and qualities (Q) may be scored regardless of the tense.

3. Examples of responses scored for (I+) and (I-).

   a. Achievement

   (scored for I+)

   Stem: Irene said, "I'm pretty sure I can do it."

Response: "She is one person who will try anything no matter how difficult the task. She tried everything and very seldom failed which made her all the more confident that she could do things."

(scored for I-)

Stem: Virginia says she hopes to do something really worthwhile someday.
Response: "Virginia is a daydreamer. She wants to accomplish something, but keeps putting of doing anything to achieve her goal. She will probably continue to procrastinate and never accomplish what she desires."

(not scored for I+ or I-)

Stem: Ruth often studies late.
Response: "She wishes to learn as much as possible. Perhaps she has a little difficulty in doing this so studies late to make up."

Note: The above utterance is not scored for (I) because it repeats the stem.

b. Affiliation

(scored for I+)

Stem: Irene said, "Won't you all please stop in and see me."
Response: "Not too popular--craves friends and companionship. Does not really know how to make friends. She entertains frequently and in this way gains some companionship."

(scored for I+)

Stem: Elaine's friends can always count on her for a loan.
Response: "She is seeking friends and approval. She probably does many other favors for people hoping to improve her friendships. She really doesn't make lasting friends, but rather they tire of her overanxiousness to please."

Note: The utterance above is still scored for (I+) even though the goal was not attained, because the activity was an attempt to attain the goal rather than avoid failure.

(scored for I-)

Stem: Diane dislikes keeping her class after school.

Response: "This teacher does this because she is afraid if she is too hard on the students, they will dislike her. She probably lets her students do most anything in class so as to avoid their disapproval."

(not scored I+)

Stem: Marilyn can't say no to a salesman.
Response: "Marilyn likes to display the many knick-knacks which she buys in her home. She probably buys many useless things so that people who come to her home will say, 'My what an unusual home you have'."

Note: The above response is not scored because the activity is instrumental to the attainment of a recognition goal rather than an affiliation goal.

c. Recognition

(scored for I+)

Stem: Karen has a very unusual way of signing her name.
Response: "Karen loves the bizarre, the unusual, the unique. She is using this technique to attract attention to her. She most likely also wears unusual clothes and strange hair styles."

(scored for I-)

Stem: Betty makes many irrelevant but witty remarks whenever she is in committee meeting.
Response: "This woman receives very little praise for what she does. She is afraid that she will be glossed over and ignored in the committee meetings so she plays the role of the 'court jester'."

(not scored I+ or I-)

Stem: Diane is always tearing down her acquaintances.
Response: "Diane feels inferior and in order to feel adequate in social situations she can find no way to build up the picture of herself so she tears down the people with whom she associates in order that she might appear in a better light."

Note: The above utterance is simply a repetition of the stem.

d. Control

(scored for I+)

Stem: Francis opposes giving more power to the student government.

Response: "She would rather direct than delegate authority. She feels responsibility for the program and trusts her own judgment above others. She wants to hold a position of greater authority and will probably work hard to become a principal some day."

(scored for I-)

Stem: Blanche insists on punishment of students who break even minor rules.
Response: "She is a stuffy type who finds security in regimentation. She wants to be master of the situation, and is afraid that if students are allowed to break small rules they will eventually break larger rules and she will lose control of the class. In order to avoid this possibility she carefully supervises everything her students do."

(not scored for I+ or I-)

Stem: Francis opposes giving more power to the student government.
Response: "Francis lacks confidence in the ability of the students and actively opposes this. She will urge the principal to maintain a faculty council."

Note: The above activity responses are not scored since it is not clear whether she opposes this because she wants the power herself, or because she really believes the students are not competent enough to handle more power.

F. Personal qualifications that aid or inhibit goal attainment (Q+ or Q-).

1. Personal qualifications must be something more than repetition of the need. Words such as conscientious and gregarious are scored for (Q+) provided there are other statements in the response from which need can be inferred. Characteristics not clearly related to goal attainment, or related to the attainment of some other goal are not scored.

2. Examples of responses scored (Q+) or (Q-).

a. Achievement

(scored for Q+)

Stem: Marilyn will usually volunteer for a difficult task.
Response: "She is a bright girl and usually works especially hard on such tasks. She likes the feeling of accomplishment when she has done such a task well. She seems to be trying to prove to herself that she is capable of such tasks."

(scored for Q-)

Stem: Phyllis was a good student in college but had a record of many withdrawals from courses.
Response: "Phyllis lacks good work habits. She wanted to do well in college, but as she fell behind in her studies during the first few weeks of a class she would withdraw rather than have to cram to catch up."

(not scored for Q-)

Stem: Gail thinks that extra-curricular activities take up too much time.
Response: "Gail is not as interested in the welfare of other people as she could be. She is apt to be self-centered and lazy. She may not be asked to help on some project she would really enjoy."

Note: This utterance is not scored (Q-) because within the context of the response it is more closely related to affiliation need than achievement need.

b. Affiliation

(scored for Q+)

Stem: Louise enjoys being a member of a large family.
Response: "Louise is socially interactive. She likes people, she likes doing things with a crowd. She is probably very affectionate and outgoing."

(scored for Q-)

Stem: Irene said, "Won't you all please stop in and see me."
Response: "Irene is lonesome and wants to have more friends. She tends to be on the timid side and even though she asks them to come, underneath she almost wishes they wouldn't. Unless she becomes a bit more aggressive she will not gain many friends."

(not scored for Q+ or Q-)

Stem: Betty can't say no to a salesman.
Response: "She does not have the fortitude to meet a high pressure salesman. A kind woman but not a strong woman. She does not want others to resent her. She probably meets classroom situations in the same way and she loses more and more control."

Note: Similar to several previous examples, the utterances above are not scored because they are not clearly related to affiliation need or an affiliation goal.

c. Recognition

(scored for Q+)

Stem: Kathy volunteered to represent the "spirit of democracy" on a float in the local parade.

Response: "Kathy likes to perform before the public. She has dramatic talent and frequently performs in local theater groups. She enjoys the praise she receives for her performances."

(scored for Q-)

Stem: Carol has many books on her shelf that she has never read.

Response: "Carol is a bright girl, but like many of us does not find time to read all her books. She wants people to think she is an intellectual. People don't like her egotism and soon see through her facade."

Note: In the above response "egotism" is scored (Q-) because it leads to loss of recognition, but "bright girl" is not scored (Q+) since it is not at all related to the recognition goal.

(not scored for Q+)

Stem: Betty makes many irrelevant but witty remarks whenever she is in a committee meeting.

Response: "Betty has a good sense of humor. She uses it to gain the center of the stage in the committee meeting.

Note: Another example of repetition of the stem.

d. Control

(scored for Q+)

Stem: If Charlotte were not a teacher, she would like to be a judge.

Response: "She is somewhat of a judge in her classroom. She likes to be in a position of authority. She is fair-minded and for this reason her students rarely get out of hand."

(scored for Q-)

Stem: Alice often dreams she is a WAC drill sergeant.

Response: "Alice is a very quiet and shy person, and has a hard time controlling her class. Sometimes when her class is disorderly she wishes she had some of the characteristics of a WAC drill sergeant."

(not scored for Q+)

Stem: Margaret is sometimes irritated when students interrupt to ask questions which sidetrack the issue she is trying to present.

Response: "Margaret is a very orderly and inflexible person. She wants everything to be just so and does not like to deviate from a set pattern. She will probably become frustrated in teaching since students are always asking questions."

Note: The above response is not scored for (Q) since the need for order, structure, or the need to be systematic is excluded from our definition of the need to control.

G. Blocks (B)

1. The scoring of the blocks category is relatively rare since utterances which can be scored as blocks occur infrequently. Blocks can be any personal or environmental state of affairs which inhibit the attainment of the goal. Blocks are sometimes confused with negative qualifications (Q-), in which case the rule to score the highest category in the learning paradigm can be applied. A statement such as, "It is difficult for her to achieve..." can be scored as a block (B).

2. An example of an achievement response scored for blocks (B).

Stem: Gail thinks that extra-curricular activities take up too much time.

Response: "Gail is a very ambitious teacher and wants to get to the top in her profession. She wants to spend all her spare time studying her subject matter, planning her lessons, and keeping up on the latest teaching methods. Having to participate in extra-curricular activities simply detracts from the time she would like to spend in these other activities."

H. Goal attainment or failure (G+ or G-)

1. The (G+) or (G-) categories are scored for clearly expressed statements of goal attainment or failure to attain the goal. Statements of general success are scored for goal attainment. Since the scoring categories for anticipated goal attainment and anticipated failure (Ga+ and Ga-) have already been discussed in detail, it will not be necessary to give many examples of the (G) category. If the reference to goal attainment is in the present or past tense it is scored (G); if the reference to goal attainment is in the future tense it is scored (Ga).

2. An example of an affiliation response scored for (G+).

Stem: Louise enjoys being a member of a large family.
Response: "Louise likes to belong. She feels security in being around people. She is probably very outgoing and friendly and her students like her very much."

I. Positive affect related to goal attainment or negative affect related to failure (P or N).

1. Affect is scored only in relation to goal attainment or failure. It is scored only for a definite emotional reaction to the attainment or failure to attain the goal. Statements of liking or disliking the goal are not scored for affect.

2. An example of positive affect (P) scored in an achievement response.

Stem: Barbara is frequently seen working on cross-word puzzles.
Response: "Barbara is the type of person who loves the challenge of a difficult task. She has a good vocabulary and when she solves a puzzle she feels a great sense of satisfaction and accomplishment.

3. An example of negative affect (N) in an affiliation response.

Stem: Elaine's friends can always count on her for a loan.
Response: "Elaine is trying to buy friendship. She wants friends, but doesn't realize that this is not the way to make friends. She will lose more friends than she gains and be even more unhappy than she is now."

J. Rationalizations or defensive reactions to failure (D).

1. The defense category (D) is another rarely scored category. When it occurs it must be clearly an attempt to overcome the negative feelings associated with failure to attain the goal, e.g., "... She has difficulty controlling her own children so she becomes very domineering in the classroom. When they don't ask her to go she'll convince herself that she didn't want to go anyway."

K. Special Scoring problems.

1. Occasionally need imagery will appear in an item which was not designed to elicit it. For example, affiliation imagery will sometimes occur to an achievement stem. The procedure has been not to score such imagery, since one of the objectives has been to build independent need scales. It has been assumed that if an individual's need is so strong that she projects it into the items of other scales, this will be indicates by her score on the scale designed to measure that need.

2. Doubtful responses. The majority of the examples used in this appendix are clear-cut examples of the categories scored. In actual practice, a great many responses fall into what can be considered a doubtful category. One example is a response where no (A) cate-

gory can be scored for a definite statement of the need, but which contains one or more of the other scorable categories. To handle such cases the rule was adopted that if more than one of the other categories are present, they are scored, but if only one is present it is not scored and the response is scored zero. The (A) category is the only one which can be scored if it is the only category in the response.

3. Conflict of motives. When a conflict of motives is involved, no category is scored, e.g., when a desire for money conflicts with a desire for friends, or when a desire for social life conflicts with a desire to achievement in college.

4. Experienced scorers hold the opinion that the only way to learn a scoring system of this kind is to collect some protocols and try it out.

APPENDIX 3

QUESTIONNAIRE

1. Name ____________________ 2. Age ________ 3. Sex __________

4. Estimated Grade Point Average to beginning of this quarter________

5. Estimated grade in this course ____________________

6. Area of Study: Elementary Education ______Secondary Education_____

7. Level of Education of Parents (Circle one)
Father: Grade 1-8 Grade 9-12 Some College College Degree
Mother: Grade 1-8 Grade 9-12 Some College College Degree

8. Father's Occupation ______________________________

9. List any HIGH SCHOOL professional, academic, honorary, or social organizations to which you belonged and any offices that you held in these organizations.
Organization: ______________ Position ____________________
______________ ____________________

10. To what church do you belong? ____________________
Approximate number days attending church functions per month (check one).
0 1 - 4 over 4 days

11. If you had your choice of any occupation, and assuming that the pay was equal for all occupations, which one would you rather follow as a career? ______________________________
What would be your second choice? ____________________

12. What would you say was the main reason for selecting the occupation which you did for your first choice? ____________________
What was the reason for your second choice? ____________________

13. Rank in order of preference the kind of work you would choose. Write a number one (1) in front of your first choice, a two (2) in front of your second choice, etc.

____ a position in which you would make many decisions affecting the lives of other people.
____ a position in which the pay is higher.
____ a position which provides the opportunity of meeting a large number of people.
____ a position where your name would be frequently before the public.
____ a position which would not be difficult or demanding.
____ a position which provides the opportunity to learn and perfect a skill.

14. List in order of your preference the three magazines or periodicals which you most frequently read (or would enjoy reading).

____

____

____

15. Rank in order of preference the kinds of reading you enjoy most. Write a number one (1) in front of your first choice, a two (2) in front of your second choice, etc. Indicate four choices.

______ Books in the area of your scholastic major.
______ Historical reading.
______ Adventure.
______ Romance.
______ Science fiction.
______ Biographies.
______ Other. (specify)

Following are several pairs of words or phrases that represent extremes in description of home or parent-child relations. Please read BOTH statements for each item and then rate your home by circling the number which you feel comes closest to describing it in relation to the two extremes.

16.	Help was withheld	1 2 3 4 5	Too much help (babying)
17.	Authoritarian	1 2 3 4 5	Democratic
18.	Much concern over danger to children	1 2 3 4 5	Nonchalant, not worried
19.	Disorganized	1 2 3 4 5	Well coordinated
20.	Arbitrary policies	1 2 3 4 5	Reasoned policies
21.	Enjoy children	1 2 3 4 5	Children a burden
22.	Critical of poor performance	1 2 3 4 5	Uncritical
23.	Openly affectionate	1 2 3 4 5	Inhibited affection
24.	Little personal association	1 2 3 4 5	Much personal association
25.	Parent's needs come first	1 2 3 4 5	Children's needs come first
26.	Always ready to answer questions	1 2 3 4 5	Annoyed by questions
27.	Good understanding of children	1 2 3 4 5	Don't understand children
28.	Many restrictions	1 2 3 4 5	Few restrictions
29.	Enforcement of restrictions was lax	1 2 3 4 5	Very severe enforcement
30.	Policies were clear on restrictions	1 2 3 4 5	Policies were vague
31.	Much discord in family	1 2 3 4 5	Harmony in family
32.	Policies on restrictions were successful	1 2 3 4 5	Policies were ineffective
33.	Penalties were severe	1 2 3 4 5	Penalties were mild
34.	Emotional level of home: High	1 2 3 4 5	Little emotion
35.	Many suggestions concerning your decisions	1 2 3 4 5	Few suggestions
36.	Suggestions were rather mandatory	1 2 3 4 5	Suggestions were optional

In the same manner will you now please rate your parent of the same sex as yourself on the degree to which they possess the following characteristics:

37.	Lack self confidence	1 2 3 4 5	Very self confident
38.	Very helpful	1 2 3 4 5	Not helpful
39.	Very domineering	1 2 3 4 5	Little dominance
40.	Very friendly	1 2 3 4 5	Not friendly
41.	Very selfish	1 2 3 4 5	Little selfishness
42.	Very successful	1 2 3 4 5	Not successful
43.	Very clever	1 2 3 4 5	Little cleverness
44.	Very understanding	1 2 3 4 5	Little understanding

Will you now please rate the seriousness of the following in regard to personal characteristics. This does not refer to your home or family, but to how serious you think the following behaviors are.

45.	Cheating-Unimportant	1 2 3 4 5	Very serious
46.	Stealing-Very serious	1 2 3 4 5	Unimportant
47.	Drinking-Unimportant	1 2 3 4 5	Very serious
48.	Disrespect-Very serious	1 2 3 4 5	Unimportant
49.	Smoking-Unimportant	1 2 3 4 5	Very serious
50.	Cowardice-Unimportant	1 2 3 4 5	Very serious
51.	Laziness-Very serious	1 2 3 4 5	Unimportant

In the same manner will you now rate the desirability of the following characteristics.

52.	Dependability-Not important	1 2 3 4 5	Very desirable
53.	Friendliness-Not important	1 2 3 4 5	Vwry desirable
54.	Success-Very desirable	1 2 3 4 5	Not important
55.	Effort-Not important	1 2 3 4 5	Very desirable
56.	Cooperativeness-Not important	1 2 3 4 5	Very desirable
57.	Cheerfulness-Very desirable	1 2 3 4 5	Not important
58.	Obedience-Very desirable	1 2 3 4 5	Not important

59. When given a task, how hard to you try to do it right?
Very hard 1 2 3 4 5 As little as necessary

60. To what extent do you enjoy being the center of attention or the "life of the party?"
Enjoy it very much 1 2 3 4 5 Get little enjoyment

61. How hard is it for you to meet new people?
Very easy 1 2 3 4 5 Very hard

62. To what extent do you enjoy being able to influence other people?
Enjoy it very much 1 2 3 4 5 Get little enjoyment

63. How hard do you try to get good grades?
Use little effort 1 2 3 4 5 Try very hard

64. How much do you enjoy being the leader of a group?
Very much 1 2 3 4 5 Get little enjoyment

65. To what extent do you enjoy going to club meetings or social gatherings
Enjoy it very much 1 2 3 4 5 Get little enjoyment

APPENDIX 4

TEACHER PREFERENCE SCHEDULE, Form G158

The purpose of this schedule is to investigate teachers' preferences for various aspects of teaching. The schedule consists of a number of statements describing many kinds of activities, events, and situations related to teaching. Teachers differ in their feelings about these activities, and this schedule has been developed as an aid to determining how great and how varied these differences are. It is important that you record your own personal feelings about these activities, even in those cases where you think that most teachers probably feel differently than yourself. Your responses will be processed and tabulated with those of other teachers, and no-one will ever be permitted to examine the replies you have given here. Although your name is to be recorded on the answer sheet, this is solely for the purposes of cross-tabulating materials from the other schedules you have completed.

Please indicate on the special answer sheet the items that you like, approve of, or would find pleasant to experience and, conversely, those that you dislike, disapprove of, or would find unpleasant to experience. For the purposes of this study it is not important whether or not you have actually done the things mentioned or have really had the opportunity to experience the events described. The schedule requires only an indication of your feelings about these events if you were to have the opportunity to experience them.

Directions: Be sure your answer sheet is labelled Teacher Preference Schedule. Please do not make any marks on this booklet. Fill in the questions at the top of the answer sheet, and proceed as follows:

Use the special pencil provided and blacken the space opposite each item number, all or part of the way, according to the following key:

a b c d e f xxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxx Blacken space through f	Strong liking, preference, approval
a b c d e f xxxxxxxxxxxxxxx xxxxxxxxxxxxxxx	Moderate liking, preference, approval
a b c d e f xxxxxxxxxxxx xxxxxxxxxxxx	Slight liking, preference, approval
a b c d e f xxxxxxxxxx xxxxxxxxxx	Slight dislike, disapproval
a b c d e f xxxxxx xxxxxx	Moderate dislike, disapproval
a b c d e f xxxx xxxx	Strong dislike, disapproval

Note that the length of your line indicates the extent to which you like, view favorably, or approve of the teaching activity described by the item. The longer your line, the more you like the activity; the shorter the line, the less you like it.

Please check your item numbers carefully as you proceed, to be sure your preferences are marked in the correct place.

Thank you for your assistance and cooperation.

1. Playing games with my pupils.
2. Having my pupils put on plays and exhibitions for other classes or for parents.
3. Subscribing to educational journals.
4. Enlivening my lessons with stories, jokes, or personal anecdotes.
5. Working actively to promote greater public recognition and appreciation of the professional problems of teachers.

6. Being concerned about my pupils' welfare outside the school.
7. Letting my pupils whisper or talk quietly among themselves.
8. Having the pupils do over papers that are not neat.
9. Having a principal who takes a close interest in the things I do.
10. Keeping careful and accurate, records of pupils' progress, assignments, attendance, etc.

11. Getting home early enough to spend a few hours every afternoon with my family and/or other interests.
12. Having my pupils dramatize stories and lessons.
13. Conducting myself in the community in ways that reflect my status as a teacher.
14. Permitting no infractions of discipline, however minor, to go unnoticed.
15. Discouraging children from telling me personal things about themselves.

16. Seeing how much I can do for children who have been deprived of affection and emotional support.
17. Having as few rules and regulations for the students as possible.
18. Fighting for better pay, sickness and accident protection, retirement provisions, etc., for teachers.
19. Browsing in toy shops.
20. Having brothers and sisters, or children, of former pupils in my class.

21. Being complimented by my supervisor or principal.
22. Having my pupils copy my favorite expressions or mannerisms.
23. Being introduced to others as a teacher.
24. Following a daily classroom routine faithfully.
25. Having other teachers take an interest in my work and offer me advice of suggestions.

26. Being an active member of a teachers' federation or union.
27. Capturing the attention of my pupils to the point where they're hanging on my every word.

28. Attending concerts, art exhibits, plays, etc., with other teachers.
29. Making up stories for children.

30. Writing letters to newspaper editors or congressmen about educational problems.
31. Having the principal or supervisor visit my classes regularly.
32. Giving the pupils the opportunity for a lot of drill and formal recitation.
33. Hearing a child unconsciously call me "mother" or "father."
34. Keeping my classroom clean and neat.
35. Putting loyalty and obedience to my principal or supervisor above personal differences of opinion.

36. Keeping my classroom so quiet that you can hear a pin drop.
37. Finishing all my work during the school day, so that when I go home my time will be my own.
38. Attending educational conference.
39. Discouraging pupils from getting to expect extra help after school.
40. Praising a child only when he's really done something deserving.

41. Bringing the problems of the school system to the attention of the public.
42. Having pupils regard me not only as their teacher but also as someone who understands and really cares about them.
43. Letting the students make their own decisions about classroom activities and procedures.
44. Keeping up with songs, books, T.V. programs, etc., that my pupils are interested in.
45. Encouraging other teachers to take an active role in a teacher federation or union.

46. Being closely supervised by my superiors.
47. Scheduling activities of the school day minute by minute.
48. Having pupils compliment me on my clothing or appearance.
49. Having the entire class do the same thing at the same time.
50. Being provided by the school administration with detailed lesson plans to be followed throughout the term.

51. Permitting children to talk only when called upon.
52. Following the careers of former pupils.
53. Encouraging my pupils to direct their own activities, providing help only when needed.
54. Forgetting all about teaching during the summer vacation.
55. Having a reputation among the pupils for being a strict teacher.

56. Getting together socially with teachers rather than with other kinds of people.
57. Speaking up for more objective and politically independent appointments of principals and educational supervisors.
58. Being invited by the pupils to join in their games or parties.
59. Telling others what my occupation is.
60. Being appreciated by the children for my sense of humor.

61. Making sure my pupils cover every bit of the curriculum.
62. Inviting pupils to question my decisions and express their own opinions.
63. Relying closely on a supervisor for help and guidance.
64. Having a pupil confide in me as in a parent.
65. Discouraging class discussions and other distractions from the planned lesson.

66. Leaving school right after the end of classes.
67. Introducing a great deal of variety in my lessons so that the pupils are continually looking forward to the next surprise.
68. Running my class with a firm hand.
69. Being identified as a member of the same social and cultural class as other teachers.
70. Putting school problems out of my mind as soon as I get home.

71. Letting students choose their own projects, topics for themes, etc.
72. Questioning acitivities of the local school board or legislative agencies.
73. Joining in the fun my pupils are having.
74. Helping children with their personal problems.
75. Helping children to discover and assert their own individuality.

76. Holding the whole class responsible for any breaches of discipline.
77. Working for a principal who doesn't make excessive demands on my personal time.
78. Spending a considerable amount of class time in group discussions.
79. Leaving extra-curricular assignments to teachers who are more interested in them.
80. Having my pupils know who is boss.

81. Helping children with their hobbies.
82. Being known as a colorful and stimulating teacher.
83. Continuing my education as a teacher by taking courses, attending lectures, etc.
84. Being outspoken in defense of teachers' rights.
85. Getting to know my pupils well enough to be able to really share their thoughts and feelings with them.

86. Doing my best to please my supervisor or principal.
87. Reminding my pupils to dress warmly, button their coats, wear rubbers, etc.
88. Following specific and carefully organized lesson plans.
89. Encouraging pupils to express themselves freely in my classroom.
90. Being supervised by a person who expects me to discuss all my problems with him.

91. Making it clear to the youngsters that I won't tolerate any foolishness.
92. Being selected to represent the teaching profession on a civic committee.
93. Having a reputation for experimenting with novel and unusual teaching techniques.

94. Having the pupils maintain proper respect at all times for my position as their teacher.
95. Insisting that parents contact me during the school day rather than on my own time.

96. Being a pal to my pupils.
97. Organizing my class so that each pupil is following his own interests and doing independent work most of the time.
98. Encouraging other teachers to express their opinions publicly about issues or events of significance to our profession.
99. Forgetting my dignity and getting right down to the children's own level.
100. Having former pupils remember me, stop to talk on the street, or come to visit.

101. A good teacher never presents the same material in the same way twice.
102. To learn something properly, pupils have to repeat and drill it many times.
103. A teacher should never stop taking courses.
104. Pupils expect too much help from the teacher and don't do enough on their own.
105. Too many supervisory appointments in the school system are made on the basis of politics rather than competence.

106. Pupils learn best with a teacher who is objective and impersonal, and who confines himself to instruction.
107. Competitive grades based on absolute standards of achievement do more to discourage students than to motivate them.
108. Children who are told what to do soon lose the capacity to think for themselves.
109. A good teacher likes all his students.
110. A pupil's first need is for warmth and tenderness.

APPENDIX 5

Personal Preferences for Educational Objectives

Every teacher sees education in a different light. Although all would agree that a new world will slowly be built through education, there is not universal agreement concerning the nature of the world that should be built. Differences in our image of this new world are a result of the fact that we differ in the kind of people we see as emerging from the educational process. What kinds of people would you like to see as products of the educational system? What would be some of their typical behaviors if education is a success? These are questions to which we would like you to give some personal answers. The answers are strictly matters of your own personal choice. They cannot be otherwise.

Below you will find listed a list of brief descriptions of persons. Some of these you may feel describe the kinds of persons that you would like to see emerging from our educational system. Some of the other descriptions you may feel represent characteristics which the educational system may not devote its primary efforts to produce, worthy though these characteristics may be.

Read each item of behavior listed below. Think of that item of behavior as one which indicates a type of person. Ask yourself whether this is the type of person that the educational process should strive to produce. Evaluate the worthwhileness of the educational goal represented by this behavior in terms of the following rating scale. Remember this is an expression of your personal preference.

RATING SCALE

5. This behavior represents a major goal of education and one of the most important that education can achieve. An education that does not contribute to the achievement of this goal is a failure.

4. This behavior represents one of the more important goals of education. All teachers should attempt to contribute to the achievement of this goal.

3. This behavior represents a goal of education which should be stressed but not to the exclusion of other goals. A goal of moderate significance and one which often cannot be stressed because of the existance of more important goals.

2. This behavior represents a minor goal of education, one to be achieved insofar as this does not interfere with the achievement of other goals.

1. This behavior represents an undesirable goal of education. If it were achieved it would indicate that education had been to some extent a failure.

MARK ALL RATINGS ON THE ANSWER SHEET

F 1. A joiner of many organizations
R 2. One who stands out from the crowd
A 3. A young man who says, "I'm going to be the best in my field," and proves his prediction
R 4. A person who will work to be known by the members of the community
F 5. Always with the group

A 6. A person who likes the coach who says, "You have won the match, when you have done your best."
R 7. A person who shows proper respect for the accomplishments of others
F 8. One who tries to see the other's point of view
A 9. A person who performs at the top level of his ability
C10. A person with supervisory capacity

F11. A person who can enjoy group activities
C12. One who will devote himself to the propogation of an ideal
A13. One who achieves against all odds
R14. A person whom others copy
A15. A person with drive to accomplish

F16. A person who can sacrifice for the welfare of the group
R17. A person who enjoys being dramatic
A18. A person who always looks for a better way
F19. A person whom others can talk to
C20. One who is always in command of the situation

A21. A builder of enterprises
C22. A good organizer
F23. A person with the philosophy, "do unto others as you would have them to unto you."
R24. A person of prominence
C25. A person who obtains automatic cooperation

R26. One who likes to run for unpaid political offices
F27. One who sticks with the group even when things go wrong
C28. A person who has the ability to control the behavior of others
A29. A person who is a doer and not a talker
F30. A friend of all

C31. A promoter of causes
R32. A person capable of appreciating the great works and deeds of others
C33. A person who is always ready to persuade others that he is right
F34. One whose main reward in life is to be able to share with others
C35. A person whose opinion is not easily swayed

A36. A person who completes his work with thoroughness
R37. A person spurred on by priase
C38. A person who can supervise
A39. One who struggles after excellence
F40. A person who is accepting of other people

R41. A showy personality
C42. A person who takes over control of important projects
A43. One who accepts the challenge offered by life
F44. A person whose front door is always open with "welcome" on the door mat
R45. A person who is in the public eye

A46. A person who wasted no time
C47. A person who can run things
A48. One who takes full responsibility for his work
R49. A person who commands attention
A50. An enthusiast

F51. A person who does what will make other people happy
C52. A dominant personality
F53. A person with a profound respect for his fellow beings
R54. A person with pride in his appearance
A55. One who pits himself against his environment

F56. One who goes out of his way to help a friend
C57. One whom others serve willingly
R58. A person with poise
C59. A person to whom others turn for direction
F60. One who always speaks well of his fellow men

A61. A person who will not give up when the odds are against him.
C62. A person who can take charge
R63. A person one cannot help noticing
A64. A self-made man
C65. A fine committee chairman

R66. A good story teller
A67. A perfectionist
F68. A friend to whom the friendless turn
A69. One who will "climb the mountain" because it is there
F70. A person who says, "I've never met a man I didn't like."

R71. A colorful person
C72. A persuasive speaker
A73. A person who can never do a job well enough to satisfy himself
R74. A person who is recognized as different
F75. A person who will be an eager member of the community

C76. One who goes out of his way to enforce the laws of his community
R77. The center of attraction at a party
F78. A person who will show deference for the feelings of others
R79. One who prizes his reputation
C80. A person who gets people down to work

A = Achievement
F = Affiliation
R = Recognition
C = Control

A5.04

Directions

The following is a list of situations in which teachers often find themselves. Following each situation are a number of reactions which have been made to the situations described by experienced teachers.

Indicate your opinions as to the appropriateness of each reaction by rating it on the following scale:

1	2	3	4	5
strongly disapprove	mildly disapprove	neither approve nor disapprove	mildly approve	strongly approve

Indicate all choice on the answer sheet provided.

A pupil had done an excellent job in oral reading during an oral reading exercise. The teacher said:

A 1. "That was very good John."
R 2. "Class, did you all see what John did?"
RA 3. "You can be very proud of your work John."
A 4. "John, it is about time you showed what you're capable of."
F 5. "That makes me very happy John."
RA 6. "I knew if I worked hard enough with you, you would finally come through."
R 7. "That's O.K., that time you remembered what I told you."
RF 8. "John's work makes the whole class look good."

A certain pupil is always talking out of turn and interrupting the comments of other pupils. One day the teacher said:

F 9. "People won't like you if you don't wait your turn."
C10. "Why can't you be quiet!"
C11. "Hush."
A12. "You have many good ideas Bill, but won't you wait your turn."
C13. "I absolutely refuse to recognize anyone unless they wait their turn."

A teacher walked into a classroom where there was a great deal of noise and said:

C14. "I'm not going to tolerate this noise."
F15. "I know you children have a lot of energy to get out of your system, but it's time to quiet down now."
CR16. "Who isn't looking at me."
A17. "We have a lot of work to get done today so we had better get busy."
F18. "Let's see who can be most cooperative in helping us quiet down."

A certain pupil was pestering others. The teacher said:

C19. "Jim, I've had just about enough of your monkeying around."
R20. "Can't we make this a model class today."
RF21. "Everyone look at Him. This is what not to do."
F22. "It really hurts me when a pupil lets me down."
C23. "Jim, I'll count three."
R24. "If you continue to misbehave I won't let you be boy of the day."
A25. "Jim, don't you have some work to do?"

A teacher found two of her boys fighting during recess. She said:

F26. "Now shake hands, and try to be friends."
C27. "You know you've broken the rules. Just for that you both can see me after school."
RF28. "You know that this reflects badly upon the whole class."
R29. "I guess you know you've lost the class some points in the contest for best behaved class."
A30. "I wish you boys would expend as much effort on your lessons."
F31. "Now let's sit down and talk this thing over."

A class has taken quite a while to settle down after recess. The teacher said:

CF32. "I certainly like the way George came in today. He sat down, put his hands in his lap, and was ready to find out what to do."
A33. "The longer we take to quiet down, the less time we have for learning."
C34. "I can't give instructions when people aren't listening."
C35. "If you're sitting by someone you're going to talk to, I suggest you move right now."
A36. "We've had our fun, now let's concentrate on our work."
R37. "If someone should come into our class, I would want them all to see how well behaved we are."
C38. "When the rude people are done, we'll get started."

A class had just finished an assignment in a very orderly way. They sat quietly waiting for further instructions. The teacher said:

F39. "I'm very pleased with the way we all cooperated today."
A40. "It's a pity all assignments can't be done this way."
F41. "You've been so good, let's all take a few minutes to visit."
R42. "I'm sure if the principal stopped in today he'd be very proud of us."
A43. "Are there any questions before we start the next lesson?"
C44. "Isn't this pleasant for a change?"

A teacher was explaining her own grading practices to her class. She said:

A45. "You all know of course that the best papers get the best grades."
C46. "In order to get a good grade in my class you have to know how to follow my directions."

F47. "Since one of the most important things we learn in school is how to get along with others, I consider this important in my grading."
R48. "I believe that people who work hard deserve recognition."
A49. "I consider the quality of your work important."

A teacher was giving a new assignment to her class. After giving her pupils the instructions for the assignment, she said:

A50. "I'm concerned about people who turn in incompleted papers. Will you be sure to complete your paper, and each do the best job you can."
RA51. "Some papers will go back to parents so don't do anything of which you would be ashamed."
CA52. "I will not accept any late papers."
F53. "The sooner we complete our papers, the sooner we can spend a little time visiting with our friends."
RA54. "I will be very happy to post the best papers on the bulletin board."

A teacher had just spent all morning talking about addition and subtraction. Then she gave the pupils a simple problem to solve, but they failed to come up with the correct answer. She said:

*55. "What did you think I was talking about all morning."
FA56. "If you don't understand have a friend help you."
A57. "Let's go over it again to make sure that we all understand."
C58. "If you had listened like I told you to, you wouldn't have had any trouble."
A59. "We're not going to let this problem get the best of us, so let's try a little bit harder."

A class had just come back from a field trip to the zoo. The teacher was getting ready to begin a discussion of the trip. She said:

C60. "I was very proud of the way you all obeyed the rules which I gave you before we left."
A61. "Who wants to tell us what they think the most interesting part of the trip was?"
F62. "We all had such fun, we'll have to do it again."
R63. "I hope all the other classes noticed how well behaved we were."
R64. "Did you like the trip I arranged."
A65. "Now I want you to write a short paper on the similarities and of the various animals which you've seen."
FA66. "I know that we all have a great deal to say, so let's break up into small groups and discuss it."

A class was in the middle of an art lesson working with water colors. One of the girls had spilled some water. The teacher remarked:

F67. "I guess Mary spilled a little water. We understand it was an accident."

* Unscored

C68. "If you had done as I told you this wouldn't have happened."
A69. "Don't bother with that, your painting is really good."
F70. "Why don't we all help Carla clean up the mess."

A class has just been shown a movie depicting Lincoln's Gettysberg Address. The teacher commented:

A71. "You've just seen a great man at his best."
F72. "Here was a true friend of the people."
A73. "Here was a man who pitted himself against all odds and won. We need more of his spirit in our classroom."
A74. "Be very critical of this movie."
*75. "How many of you paid attention?"

A child had forgotten to bring in his homework for the third consecutive day. The teacher said:

A76. "How do you ever expect to learn anything if you don't do any work?"
C77. "Just for that I'm doubling your assignment for next time."
F78. "I would appreciate it if you'd bring it in to me tomorrow."
A79. "Since you're taking so long, it ought to be an exceptionally good job."
R80. "What will people think if I can't get my pupils to do their work."

A child had said, "My father says you are wrong." The teacher then said:

C81. "Is your father an authority in this area?"
A82. "You must remember that things your father learned some time ago may not be true today?"
A83. "Let's look it up and see what is correct."
C84. "I don't care who says I'm wrong, this answer is correct."
FA85. "We should try to consider everyones point of view."
F86. "Well anyone can make mistakes, we shouldn't hold this against them."
R87. "I think the opinion of your teacher is deserving of some respect."

A class had been giving oral reports. A child had said that the report of another child is stupid. The teacher said:

F88. "We should be considerate enough not to call anyones work stupid."
*89. "Who do you think you are to be passing judgment on his report?"
*90. The teacher says nothing.
A91. "The important thing is that he did his best."
C92. "No one asked for your criticism."
RF93. "I'll be the one to decide the merits of these reports."
*94. "How would you like someone to say that about you?"

* Unscored

A pupil had insisted that he is right, even after the teacher has told him he is wrong. The teacher, now realizing that the child was right said:

C 95. "Let's get on to the next problem."
A 96. "Good for you, you were very alert."
A 97. "That took some excellent thinking to catch my mistake."
R 98. "Oh, how silly of me to make such a trivial mistake."

A child was giving a report in front of the class. The report was dull and interminable. The teacher remarked:

A 99. "That will be enough of that."
F100. "That's very good, but now we have to give another child a chance."
A101. "I hate to interrupt you, but I hate to see someone not doing as well as he can."
F102. The teacher not wanting to offend the child says nothing and lets him continue.
A103. "Your report would probably be better if you mentioned only the important things, and not so many details."

A child helped another child with his work even after the teacher has said, "Nobody is to receive any help." The teacher then said:

F104. "If you must help him on this, do it quietly so as not to disturb the rest of the group."
C105. "I thought I told you that no one was to receive any help."
C106. "Something about disobedience gets my goat."
A107. "If you're really accomplishing something, you may continue."
A108. "Each child must learn to accomplish something on his own."

A child told his teacher that he didn't like another teacher. In responding to his comment, his teacher said:

F109. "I bet if you'd get to know her, you'd really get to like her."
R110. "It isn't important whether you like her as long as you respect her."
A111. "You may not like her, but she's a very competent teacher and you can learn a lot from her."
C112. "You shouldn't dislike teachers because they're strict, it's their job."
F113. "I'm sure if you'd give a little more, you would develop a fine relationship."
C114. "You're not to criticize your teachers. I don't want to hear any more about it."

A boy had ignored the teacher's suggestion that polite boys give their seats to girls. The teacher said:

F115. "How do you ever expect to be well-liked if you don't learn good manners."
C116. "I expect all polite boys to be standing by the time I count three."
R117. "I'm disappointed that my training hasn't had any affect."

Several boys have to be told that the principal had ordered that they be kept after school for misbehavior. Their teacher told them by saying:

F118. "I'm terribly sorry, but the principal has asked me to keep you after school."
CR119. "The principal and I have decided that you should be kept after school for misbehavior."
A120. "The principal had told me to keep you after school. You can spend your time working to good advantage."
C121. "The principal has told me to keep you after school. Now I want you to be here promptly after the last bell."
F122. "I have to keep you after school today, but I think we can have some fun."

A teacher had just found out that her class has the highest incidence of misbehavior in the halls. She said to them:

R123. "What will the rest of the school think of us if we continue in this matter."
R124. "I'm afraid to look other teachers in the eye for fear of what they might say."
R125. "This class is developing a bad reputation which reflects upon men."
C126. "None of us like to be policemen, but I'm afraid this is what I'll have to be.
F127. "I guess I've just been too nice to you."
C128. "If I have to stand in the halls and watch you I will."
A129. "What shall we do about this problem?"

A teacher had a child in her class who wanted to make more reports in front of the class than any other child. One day the teacher said:

FA130. "Come and see me and I'll tell you whether your report is worthy of presentation."
A131. "I must say, I wish I had more pupils as ambitious as you."
A132. "We will only listen to the best reports today."
C133. "Not today, you've had your turn."
F134. "I'm sure we all enjoy your reports, but everyone deserves a turn."

A class was getting ready to put on a short play for an assembly. After the last rehearsal the teacher said:

R135. "Remember to do a good job tomorrow because the whole school will be watching."
A136. "The important thing is that you do the best job you can."
R137. "Tomorrow I will be able to observe the fruits of my efforts."
R138. "I think you will feel very satisfied when the audience applauds."
F139. "The value of all this has been the association and cooperation of the group."
R140. "Remember, I'll be there to prompt you."

One child in a class had not been able to get along with his teacher. On several occasions he had called her "mean," "unfair," etc. One day the teacher said:

F141. "It hurts me very much to know you feel that way."
F142. "Don't you think we can get to know each other better and be friends."
C143. "I think what you need is someone to really snap you into line."
R144. "You should show more respect to your teachers."
R145. "I think you owe me a public apology."
*146. "You may not always agree with me but you're learning a lot in my class."

In a certain class the teacher finds that a number of her children are vying with one another as to who can get the most problems correct. She said:

F147. "I think you'll find more satisfaction by cooperating with one another."
F148. "I don't think this is such a good idea, because the losers will feel bad."
A149. "I'm pleased by your enthusiasm."
A150. "Why don't more of you join into the competition."
*151. "Stop worrying about your neighbor, just see that you get them right."

A child has spoiled an elaborate drawing on which he has marked by tearing part of it. The teacher said:

*152. "Now you won't be able to show it off to your parents."
*153. "That was an unfortunate accident. Let's see if we can repair it."
*154. "The important thing is that you finished it and did a good job."
*155. "There are certain rules which have to be followed, otherwise you see what happens."

A teacher had just assigned her class a picture to draw of a farm. One child came up to the teacher and told her that he wanted to draw something else. She said:

*156. "That's fine. Draw whatever you feel you can do best."
*157. "I m sorry but you'll have to do what I told you."
*158. "Don't you like the topics I choose?"
*159. "One thing we all must learn is that we can't always do what we want."
*160. "I'm glad to see you have an idea of your own."

* Unscored

Self Ratings

Listed below are a few of the many characteristics which have been used to describe people. We are asking you to describe yourself in terms of these characteristics, as compared with people in general. On the scale accompanying each characteristic, 1 stands for the least and 7 for the greatest amount. Please circle a value for each characteristic as it applies to you.

		Least						Most
F 1.	affectionate	1	2	3	4	5	6	7
R 2.	proud	1	2	3	4	5	6	7
* 3.	timid	1	2	3	4	5	6	7
* 4.	enthusiastic	1	2	3	4	5	6	7
C 5.	persuasive	1	2	3	4	5	6	7
A 6.	hardworking	1	2	3	4	5	6	7
* 7.	creative	1	2	3	4	5	6	7
R 8.	colorful	1	2	3	4	5	6	7
A 9.	efficient	1	2	3	4	5	6	7
F10.	hospitable	1	2	3	4	5	6	7
**C11.	easygoing	1	2	3	4	5	6	7
* 12.	confident	1	2	3	4	5	6	7
F13.	cooperative	1	2	3	4	5	6	7
* 14.	skeptical	1	2	3	4	5	6	7
C15.	decisive	1	2	3	4	5	6	7
F16.	considerate	1	2	3	4	5	6	7
A17.	studious	1	2	3	4	5	6	7
* 18.	anxious	1	2	3	4	5	6	7
**R19.	modest	1	2	3	4	5	6	7
* 20.	loyal	1	2	3	4	5	6	7
**C21.	tolerant	1	2	3	4	5	6	7
F22.	friendly	1	2	3	4	5	6	7
A23.	motivated	1	2	3	4	5	6	7
R24.	unusual	1	2	3	4	5	6	7
* 25.	playful	1	2	3	4	5	6	7
A26.	persevering	1	2	3	4	5	6	7
* 27.	well informed	1	2	3	4	5	6	7
R28.	praiseworthy	1	2	3	4	5	6	7
**C29.	forceful	1	2	3	4	5	6	7
* 30.	cheerful	1	2	3	4	5	6	7

A = Achievement
F = Affiliation
R = Recognition
C = Control

* Filler item - not scored
** Reverse direction of scale in scoring

APPENDIX 6

MOTIVATION RATING SCALE

Name of Teacher ______________ School ______________ Room ________

Observer ____________________ Date ______________ Time ________

ACHIEVEMENT

(Inter-rater reliability = 0.26, N = 82)

Gives and marks assignments but with no emphasis on doing well.
May not give marks at all. Pupils who make errors may be asked 1
to correct them. Pupils are never told what standards to achieve
and no standards are offered. Whatever is emphasized in the classroom
is on matters other than achievement. 2

Typical moderate emphasis on achievement and accomplishment. 3
Marks and grades are given as a matter of routine. Teacher
expects pupils to work well, but there is not a continuous 4
emphasis on standards of work and neither are certain pupils
held up as examples of academic excellence. 5

Teacher keeps on emphasizing standards in work. Indicates with 6
each assignment the importance of doing well. Achievement to the
limits of the pupil's capacity is expected. Any tendency to waste 7
time is handled severely.

AFFILIATION

(Inter-rater reliability = 0.19, N = 82)

Pupils do not exist as individuals. Addresses comments to
"class" or "people." Does not discuss inter-personal relations. 1
Has little interaction with individual children and then at a
highly impersonal and intellectual level. Cold. 2

A typical teacher. Interacts with children as well as with 3
group. Addresses public remarks to children as to the group.
Is courteous and friendly with children but does not go over- 4
board to win pupil's affection.

5

Interacts to a great extent with individual pupils. Uses terms
such as "dear." Discusses matters such as "why one should not 6
hurt another's feelings." Avoids any action that might hurt
pupil-teacher relationships. Consults pupils frequently on what 7
they want to do. Displays affection.

RECOGNITION
(Inter-rater reliability = .33, N = 82)

One of the group rather than as a person set apart from the
pupils. Expects no special privileges for herself. Teacher 1
rarely is in the center of attention of the pupils and appears
awkward when she has to fulfill this role. 2

3

A typical teacher. Seeks some recognition from children and
some degree of respect from them. Seems quite willing to relin- 4
quish her central role when a pupil can appropriately perform
in front of the class but most of the time performance is just
part of the job to be done. 5

6

Runs the class with pride of showmanship. Most of the time
seeks to be the center of attraction for the children and the 7
object of their attention. Tells stories, anecdotes and jokes.
Discusses episodes in own life. Enjoys playing to the gallery
and looks for approval for performance.

CONTROL
(Inter-rater reliability = 0.46, N = 82)

Very permissive teacher. Pupils move around and interact freely.
Children exercise considerable choice in assignments. Work is 1
planned by the pupils. Teacher asks pupils frequently to ex-
press their own opinions and rarely expresses hers. 2

3

Exercises some control but does not attempt to control every
aspect of pupil behavior. Assigns work but often takes into
account the preferences of the pupils. 4

5

Exercises strong control over every phase of pupil activity.
Pupils work strictly as directed. They do not choose assign- 6
ments. Movement and inter-pupil communication is controlled
by the teacher. Whatever is done is done with the consent 7
of the teacher.

APPENDIX 7

Classification of Statements

A. General rules

a. Score for the first significant idea expressed

b. When in doubt take context into account

c. Certain categories take precedence over others

(1) An activity that is both a game and an academic learning activity is scored as an academic activity and not as a game.

(2) A statement that is both a reprimand and a direction to perform a certain activity is scored as a reprimand.

(3) Statements are classified in the management category when they are concerned with the mechanics of classroom operation such as taking the roll call, collecting milk money, organizing games and rest periods between periods of study, putting the room in order, planning school shows, passing out paper and finding out who needs pencils, etc. Activities not included in the management category are directions to use a certain book, to start work, to stop work, passing out books, collecting books, the giving of academic assignments and matters related to the evaluation and checking of the work of pupils.

(4) Rhetorical questions are not classified as questions.

(5) Some reprimands are scored elsewhere: "be quiet," "need for social relations," "sit up," (scored in 2.4), corrects, rejects.

B. Scoring categories

a. INFORMING (academic)

1.1 Emits information, answers questions, repeats information. Included in this category are such items as

The story is called "Black Sheep."

The introduction to a question is sometimes an item of information which is scored in this category as, for example:

Now most of America is inhabitable, but what parts are not?

1.2 Demonstrates

The teacher must be in the process of demonstrating or the statement must be an introduction to a demonstration as would be the following:

> I am going to show you how to do it (does long division on board). John will show us how to do it.

1.3 Provides cues and suggests sources of information.

1.4 Corrects (takes precedence over other categories).

Sometimes a correction is a reprimand, but it is scored as a correction, as when the teacher says:

> I've told you not to do that a million times.

Sometimes one pupil corrects another as when the teacher says:

> Jimmy, tell Paul where he was wrong.
> Who can tell Paul where he was wrong.
> Correct him, Jimmy.

Implied corrections are scored as corrections.

> Are you sure you are right?
> Many of you have not learned how to spell.
> Think over your answer and tell me if it is right?

1.5 Asks question to arouse response or requests response.

Rhetorical questions are not scored in this category.

This category differs from 3.4 in that the teacher utterance here requires an immediate and brief response. In contrast category 3.4 directs the pupil to a larger unit of work.

Utterances scored in this category include:

> What is the capital of Iowa?
> Tell me, which word is spelled incorrectly?
> The largest river in South America is ______.

1.6 Reinforces or encourages.

Includes direct reinforcements or direct encouragement.
If these are indirectly implied or inferred from context then they are classified under 1.8.
Often the reinforcement is a single word as in:

> Right, now let's try the next one.

Sometimes it refers to general work habits as in:

See how nicely Jane is doing her work.

Do not score in this category reinforcements which are incidental to a punishing remark such as:

I wish you would all do your work and mind your business as Jane does.

Although this remark may be reinforcing for Jane, the purpose of the teacher is not to reward Jane.

Remarks such as the following are scored for encouragement even though they are introduced by an item of information.

This looks hard but you can do it all right.

Here again, the purpose is not to convey the information that the assignment looks hard but rather it is to encourage the pupil.

1.7 Relates personal experience.

Items are classified in this category regardless of whether they inform, amuse, or serve other purposes.

1.8 Implied reinforcements.

Many remarks of teachers are introduced with the words, "Yes," "All right," "Perhaps," and others which often imply reinforcement. If reinforcement can be reasonably implied then the item is scored in this category. Examples are as follows:

Yes, and I think that there are some other reasons too.
All right, and what else did Jefferson do.

However the following would not be scored in this category:

All right, let's open our workbooks to page 6.

b. CONTROLLING

2.1 Reprimands or implied reprimands

This category includes all reprimands or implied reprimands except those related to noise in the classroom or keeping quiet. Implied reprimands of the following type are classified in this category:

Why can't you behave like the other children?
This is your last chance.
Janie is quiet. Why can't you all be like her?
Many of you are doing fine, but some aren't thinking.

While the latter might be interpreted as a reinforcement. there is some likelihood that the statement is only embarrassing to Janie. Hence it is scored as a reprimand.

If a correction carries with it a strong reprimand it is scored as a reprimand.

Do you have to be so careless. You spell that word wrong every time.
That's a stupid error.

2.4 Exercises control to gain recognition.

This category includes all statements in which the teacher attempts to obtain the attention of a child or of the children. Statements such as the following are classified here:

Turn around and look at me.
Pay attention.
You won't learn unless you watch.

2.5 Asks pupil or pupils to be quiet (includes reprimands of this type).

Teachers not only reprimand children directly for making too much noise or talking too much but they sometimes also reprimand children indirectly for this activity. Statements of the following kind which are indirect reprimands for being noise are classified in this category:

I wish you were all as quiet as Joan.

c. SETTING OF GOALS AND STANDARDS

3.1 Asks pupil or pupils what they want to do or permits choice

Includes statements where the pupils are allowed to vote on what they want to do and also where pupils are asked to volunteer for particular activities.

3.4 Directs pupil or pupils to achieve goal or perform task.

The category includes the starting and stopping of work and statements as:

Open your books to page 93.
Look at the map on the wall.
You've had enough time to do your work.

Statements indicating the general nature of the work to be performed are classified in this category such as:

Study the section on George Washington.
We will now work on our Weekly Reader.
Look up all the new words in the dictionary.

Statements indicating some aspect of the procedure to be followed are classified here, as, for example,

You are going to have to work fast to get through.
Be sure to watch your spelling.
Think this one through carefully before you start.

In general, this category deals with fairly large assignments. Directions to spell a word, or name a state, or multiply 8 times 7, fall into category 1.5.

The category includes only academic activities. Academic activities include dancing, drawing, but not games. Class elections are classified as academic in so far as they involve the learning of procedures and are not brief routine matters. It includes also workbook exercises.

3.5 Activities related to grading, evaluating, checking up, correcting of work.

Includes acts preparatory to these activities such as:

Today we will have an examination.
Number the lines from 1 to 20.
I'll come over in just a minute and check your work.
Let me check over this.

Any activities related to the reading of test questions, administering directions for tests, reading the right answers, and entering grades are classified here.

The second question, 8 times 9.
Change papers so we can mark them.
Write the score at the top of the paper.

Some activities that follow tests are also included here.

Raise your hand if you have another answer which you think is also right.
How many got every one right?

General remarks which pertain to the evaluation of the work of the class belong in this category.

I think you did rather well (on the test)
You are going to have to get busy and learn the ones you missed.
Next time see if you can do better.

Attempts at informal evaluation are included here such as:

How many know the name of the capital of Idaho.
Does everybody understand how to do this?

d. MANAGEMENT

Includes all of those organizing activities that are necessary for the operation of a classroom but which are not concerned immediately with the achievement of academic objectives.

4.1 Routine class management

Conducts roll call. Collects milk money. Tells children to line up.

This category includes mainly statements where a child or children are directed to do certain things such as:

Put everything away for recess.
I want you all to line up by the door.
Come up and hand in your milk money.
Take your books out of your desks.

Includes activities preparatory to getting down to work such as:

Includes: Don't do management items unless clearly reprimanding.

THE CATEGORY DOES NOT INCLUDE STATEMENTS CONCERNING BROAD PLANS OR FUTURE ACTIVITIES.

4.2 Delegates management function to pupil.

Includes statements where the pupil is assigned some management function which may be quite minor such as that of closing a door, passing out paper, collecting books or examinations. Sometimes a major management function may be included as when a child functions as class chairman.

4.3 Organizes games, recreations, rest periods and similar non-academic activities.

4.4 Reads (literary rather than informative)

4.5 Seeks information

Includes statements such as:

Where did we stop?
Whose turn is it?
What were we on?
Whose birthday is it?
Where is Jane today?

4.6 Emits administrative information.

This is contrasted with 4.1 in that it includes general announcements while in 4.1 specific instructions are given to a pupil or to pupils.

In this category are placed announcements such as:

Tomorrow our mothers come to visit the school.
We have some new books from the library.

Comments about what has been done or what will be done are classified here such as:

Do you remember when we studied about George Washington.
Some day soon we will talk about the Civil War.
I'll take up that problem later.

General comments about procedures are classified here as, for example:

We will work on this unit in groups.
We are going to skip that chapter.

ADMINISTRATIVE MATTERS RELATED TO GRADING AND CHECKING ARE NOT INCLUDED HERE BUT ARE CLASSIFIED UNDER 3.5.

Announcements about future recreational activities are classified in this category as, for example:

When you have finished your reading we will have a game.

e. AFFILIATION

5.1 Expresses affection

5.2 Expresses need for good social relations

5.4 Suggests one child help another or offers to help a child

5.5 Small talk
This category includes minor reinforcements such as:

Helen sure looks nice in her new dress.